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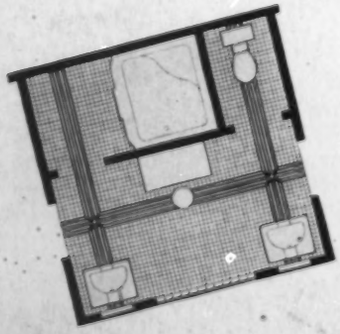

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COVER: From an original rendering by Dr. Louis Parnes, A.I.A.

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THE RECORD REPORTS

Housing Balanced on Congressional Teeter-Totter FHA Pushes Rental Housing • W-E-T Bill Proposals Are Split • International Housing Study Suggested

While the federal government, having discarded many of its building controls, turns its emphasis to a program of rental housing, the building industry moves rapidly ahead to meet the nation's manifold construction needs.

As the new Congress got squared away for its task of reorienting legislation affecting the nation's economy, building and housing remained balanced on a fence between the "planned economy" and free enterprise. While there didn't seem to be much doubt on which side the teeter-totter would eventually come to rest, the new Congress did not show much disposition to complete the push into freedom for building. Other things were to come first, matters such as labor legislation and taxation and budgets, though the obvious need for rental housing was bringing real pressure for action, and the W-E-T Bill was still around.

Had it not been for the President's moves in December to remove many building controls and to substitute permits for the priority system, Congress would probably have kept building — or at least housing — on the agenda for early action. But there seemed a disposition to feel that the President had taken the ball, and that it might be good strategy to let him carry it for a while. Nevertheless, the housing matter was far from dead, and various veterans' groups and others were coming forward with programs, mostly directed at stimulating private investment in rental housing.

Rental Housing Before Congress

In his state-of-the-union message the President said very little about housing. He called it "of great importance" and said it should be the responsibility of private enterprise, adding: "the government will continue to expedite the flow of key building materials, to limit nonresidential construction, and to give financial support where it will do the most good. Measures to stimulate rental housing and new types of housing construction will receive special emphasis."

The President had made these promises and set forth these objectives in his December statement. Controls were to be "relaxed or dropped as rapidly as the situation permits." He had asked for studies of proposals to cover cooperative and mutual housing enterprises, "yield insurance" on rental projects, tax incentives to builders, and federal aid for housing low-income families. He wanted the insured financing authority under the Patman Act extended at least for rental housing.

To increase the proportion of rental units, all available means are to be used — new construction, conversion, rehabilitation and re-use. For one thing, the President released to FHA the second billion dollars under the Patman Act for insured mortgage financing to builders. FHA simplified procedures and broadened eligibility standards; it also arranged to review and amend commitments issued in advance of construction and to extend the term of amortization beyond the usual 28 years; it further worked out lending regulations to permit adjusting of mortgage terms at subsequent periods. NHA arranged meetings regionally and locally to develop construction programs.

Specifically, for instance, FHA reduced monthly carrying charges on financing new multiple housing projects with a view to cutting rentals. This was done by extending mortgage maturities by five years or more. It largely affects, say officials, "types of construction and architectural design heretofore not eligible, with emphasis placed on small rental structures." It cut the minimum required initial principal payment on a level annuity basis from 2 per cent to 1½ per cent of the original mortgage.

Multi-Family Projects Pushed

One of the first steps taken under the new set-up was an announcement by FHA of a series of changes in its procedures and policies intended to encourage larger production of rental dwellings for veterans. Three broad avenues of approach will be used: (1) conversion of existing structures, which will produce the quickest action at lowest cost and probably at lowest rentals; (2) construction of more two-, three- and four-family units, considered the next speediest method and one which will broaden opportunities for builders and investors; and (3) production of more large-scale rental structures.

In its announcement of a 533-unit student-veterans housing project at the University of Miami, to be financed with the largest single mortgage to date insured by FHA ($4,969,100), Agency officials advised that preparations for multi-family projects had gone ahead in recent months in spite of the uncertain future of building costs, short supply and uneven flow of building materials, and uncertainty as to rent allowances. More than 60,000 units in such projects were listed in various planning, processing or committed stages, and FHA was under pressure to speed up its processing of applications for insurance of rental housing loans.

(*Continued on page 10*)

"We should have stayed up north where we had climatic control!"

— Drawn for the RECORD *by Alan Dunn*

Crane's production plans for 1947

We don't need to tell you that Crane plumbing and heating equipment has been in short supply this past year. Even stepped-up production has been unable to meet the unprecedented demand. Here's how the situation stands today:

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THE CRANE ENAMELWARE PLANT AT CHATTANOOGA is in production on bathtubs, sinks, lavatories and other porcelain enamel on cast iron products. Manufacture has been concentrated on items in greatest need, and production on these in many cases exceeds prewar production. Plant capacity is greater than ever before, and 1947 will see an even greater quantity of plumbing fixtures pouring out as fast as material and labor conditions permit.

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This is a record of which Crane Co. may well be proud—we regret that it was still not enough to give everyone the new Crane equipment he wanted.

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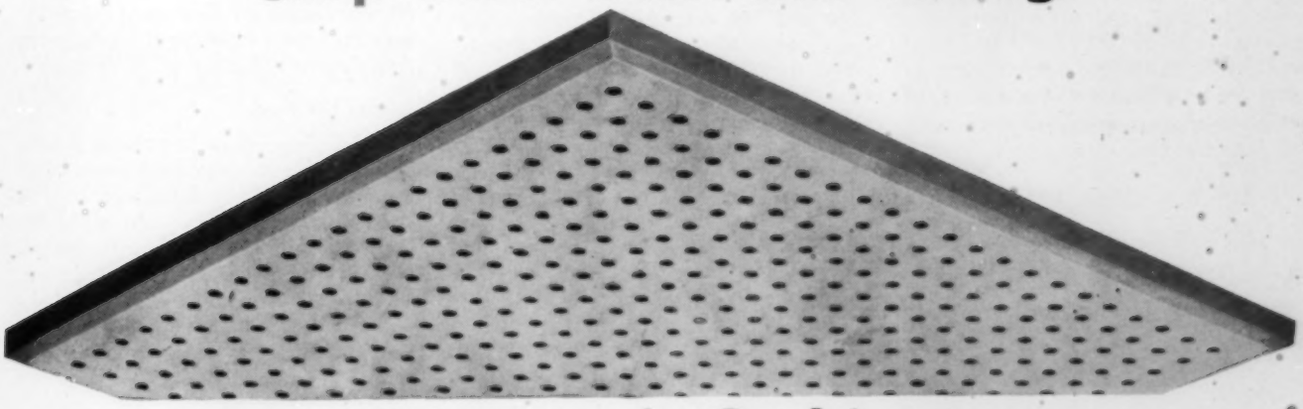

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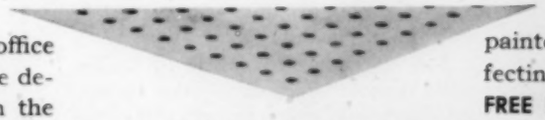

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W-E-T Proposals Split Up

Generally speaking, early prospects are for considering housing proposals as separate bills and on their individual merits rather than a bulking of a wide range of proposals under one measure such as the Wagner-Ellender-Taft bill of 1946 fame. Some want especially to have public housing proposals treated separately. But the President, in his state-of-the-union message, specifically asked Congress for "comprehensive legislation . . . similar to the non-partisan bill passed by the Senate last year. At a minimum, such legislation should open the way for rebuilding the blighted areas of our cities and should establish positive incentives for the investment of billions of dollars of private capital in large-scale rental housing projects. It should provide for the improvement of housing in rural areas and for the construction, over a four-year period, of half a million units of public low-rental housing. It should authorize a single peacetime federal housing agency to assure efficient use of our resources on the vast housing front."

Industry Trends Indicative

Meanwhile, general trends in the industry indicated not only more houses and apartments but also schools, stores, office buildings, and some factory expansion. Economists counted on an upward swing in construction to buttress total business activity with downward price swings getting under way. Some felt high costs might temper a building boom.

As to new departures in construction, few foresee radical changes in design but many expect continued new development in materials. Prefabs are expected to hold in the main to conventional designs.

Among statements of the current challenge to the industry is one presented to the Senate Small Business Committee by H. E. Foreman, managing director of the Associated General Contractors.

"The period of its greatest activity in history lies ahead of the construction industry," Mr. Foreman said. "The removal of regulations does not constitute a magic plan, complete with a set of statistics which will show that within a year or two everyone will be well housed. The demands for new housing and other construction are so great that they cannot be fulfilled immediately even with production far above any previous peaks."

Skilled Workers Trained

The Department of Labor cites the construction industry as a pace-setter in the field of skilled worker training. Heavy increases in apprenticeship in the industry, says the Department, lead a general postwar advance in such training. Here are some of the figures they rely on: apprenticeship programs in building trades moved up from 954 on VJ-Day to 2033 by the end of last October and the number of participating contractors went up even more sharply from 16,780 to 45,660. Ex-servicemen now account for fully 85 per cent of all the apprentices.

In the labor picture generally, the Bureau of Labor Statistics reports that 1,700,000 workers were engaged in new on-site construction, a less than seasonal decline. Even so, lessened demand for skilled workers in many parts of the country during the winter has eased the general shortage. From the standpoint of home building, BLS says, construction labor was most difficult to obtain in California, especially in Los Angeles and San Francisco, where hundreds of homes were being delayed by inability to obtain workers.

International Unit Asked

A request has been made to the Economic and Social Council of the United Nations to set up a unit on international problems of housing and planned reconstruction. The request, made by the International Congress for Housing and Town Planning, is reported by Assistant Secretary of Labor Philip Hannah, who headed the U. S. delegation at the meeting in England. Mr. Hannah submitted a report to the Secretary of State on the meeting, at which formal discussion centered around: (1) replanning the centers of cities including decentralization of population to outlying parts of metropolitan regions; (2) housing economics — including finance in forms of government assistance; and (3) housing techniques which emphasized recent developments in building methods.

Plans for the next meeting of the organization and for its future program are to be drawn up by an Interim Executive Committee of which Walter Blucher, executive director of the American Society of Planning Officials, is the American member.

Loans Hit Peak

The Federal Home Loan Bank System reports that the combined assets of its member institutions hit a peak in 1946 of roughly $10 billion, a gain of $1,500,000,000 during the 12-month period. Mortgage loans for the year were about 94 per cent more than 1945. Of a $3,400,000,000 total, more than $600 million was for loans to finance home construction compared to $176 million in 1945.

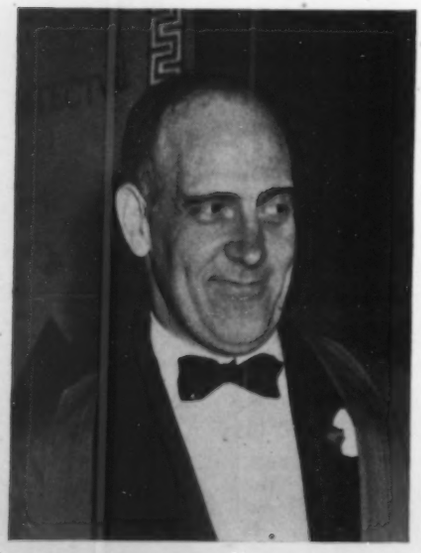
Odds and Ends

Scattered developments of building interest include the following:

1. Among new guaranteed market contracts is one for 8500 factory-built plywood houses during 1947 with the General Panel Corp. of Los Angeles. RFC approved a $1,500,000 loan application from the corporation. The house is a one story, two-bedroom bungalow type of 714 sq. ft. floor area.

2. A Commerce Department booklet on brick manufacture reports that more than half of all houses in cities of one million or more are made of brick. In cities between 500,000 and one million about 25 per cent are of brick, while in smaller cities the total runs about 11 per

(*Continued on page 12*)



The architect of the World Capitol: Wallace K. Harrison of New York City

HARRISON NAMED TO PLAN U. N. SITE

What is likely to prove the prize architectural plum of the year, and possibly of the decade, has been awarded to Wallace K. Harrison of New York in his appointment as Director of Planning for the projected skyscraper capitol of the United Nations.

Mr. Harrison, co-designer of Rockefeller Center and one of the leading architects in the country, was the unanimous choice of the U. N. Headquarters Advisory Committee. President of the Architectural League and senior member of the New York architectural firm of Harrison and Abramovitz, Mr. Harrison will have full authority to prepare the plans for the world capitol. He will be assisted by a special staff of architects and engineers and a U. N. Board of Design Consultants composed of leading architects of other United Nations countries.

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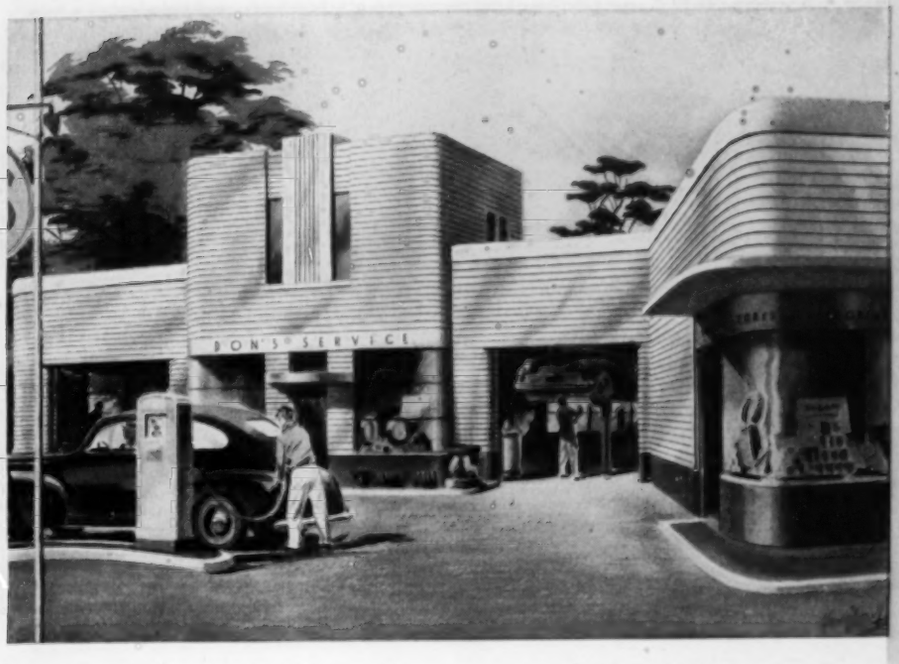

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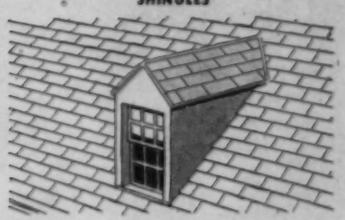

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THE RECORD REPORTS

(*Continued from page 10*)

cent. Only 4 per cent of rural houses are of brick and only 2 per cent of all farm houses.

3. The National Association of Home Builders has called for liquidation of the Federal Public Housing Authority and handling of relocating temporary public units by the Army Engineers.

4. FPHA advises that 53 permanent housing projects in 11 states and Hawaii recently became available for use as low-rent public housing for low-income families. They represent a total of 14,521 dwelling units and a cost of $67 million.

5. Hundreds of privately owned properties leased by the federal government during the war and remodeled to house war workers are now being returned by FPHA to the original owners.

❖ ❖ ❖

CONFERENCE ON CHURCHES HELD

Protestant church buildings, additions and improvements to the total of $650 million are currently being planned, architects attending a meeting of the North American Conference on Church Architecture last month were told.

Definite trends in church design were indicated by the exhibit of photographs and plans of recently completed and projected Protestant churches held in conjunction with the conference. Facilities such as recreation halls and kitchens are almost universally demanded. A general departure from the convention-hall auditorium-type of church is noted in all denominations in favor of the sanctuary with chancel and altar that is traditional in the Episcopal Church. Less than half a dozen of the more than 100 churches displayed veered from the traditional in exterior design.

One of the main speakers on the program was Henry L. Kamphoefner, A.I.A., head of the school of architecture at the University of Oklahoma. Speaking on "Architectural Education and its Relation to Contemporary Church Architecture," Professor Kamphoefner stressed the importance of developing an architecture expressive of our own time. Greek architecture, he said, became great "because it was experimental, because of the constant and persistent character of the classical Greek to do something better than had ever been done before. The Parthenon, the Erectheum and other beautiful buildings on the Acropolis in Athens were modern architecture in their time. If conservative reaction had been as successful then as it is now in thwarting expression and progress in architecture,

(*Continued on page 14*)

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THE RECORD REPORTS

(*Continued from page 12*)

we should not have a famous work of the Periclean Greek period to enrich our cultural heritage."

Lantern slide views of current church plans were shown at the meeting by E. M. Conover, director of the Interdenominational Bureau of Architecture, who pointed out the increasing similarity of plan and design among Protestant denominations. Mr. Conover was re-elected secretary of the conference.

AWARDS ANNOUNCED

The Gold Medal of the American Institute of Architects for 1947 will be awarded to Eliel Saarinen of Bloomfield, Hills, Mich., "in recognition of his outstanding achievements in the practice of architecture and inspiring leadership in the field of architectural education." A native of Finland, Mr. Saarinen is at present a member of the faculty of the Cranbrook Academy of Art, and designer of the Cranbrook Foundation project at Bloomfield Hills.

The Executive Committee of the Boston Society of Architects has announced the award of the Rotch Traveling Fellowship for 1946 to Melverne C. Ensign.

ON THE CALENDAR

February 20: Illustrated lecture on Principles of Architectural Design and the Orders of Architecture, by Harvey Wiley Corbett, F.A.I.A. Discussion by Ely Jacques Kahn, F.A.I.A. Health Bldg. Auditorium, Worth at Centre Sts., New York City. Under auspices of New York Society of Engineers. Time, 5:45 P.M. Admission, $1.00. For tickets and information address Morris Berman, Chairman, 393 Central Park West, Box 402, New York 25, N. Y.

February 23–27: National Association of Home Builders Convention and Exposition, Stevens Hotel, Chicago.

March 7–8 (tentative): 1947 Convention, Michigan Society of Architects, Grand Rapids, Mich.

March 19–22: 1947 Annual Convention, American Society of Tool Engineers, Rice Hotel, Houston, Texas.

March 22–27: Western Metal Congress and Exposition, Oakland Municipal Auditorium, Oakland, Calif.

March 25–28: 17th annual Safety Convention and Exposition, Hotel Pennsylvania, New York City.

April 19–27: Metropolitan Home Show sponsored by Home Builders Council of New York, New Jersey and Connecticut, Grand Central Palace, New York City.

May 5–11: 2nd National Plastics Exposition and Annual Convention, The Society of the Plastics Industry, Coliseum, Chicago.

(*Continued on page 16*)

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THE RECORD REPORTS

(*Continued from page 14*)

June 12–22: 2nd annual Construction Industries Exposition and Home Show, Pan-Pacific Auditorium, Los Angeles.

July 7–13: 1st Annual Store Modernization Show, Grand Central Palace, New York City.

AT THE COLLEGES

Architecture at B.C.

A department of Architecture is being organized at the University of British Columbia, Vancouver, B. C., with the first year's work already under way.

The five-year course will be built along the lines recommended by members of the C.I.A.M. and will parallel courses given in the most advanced schools in the United States and Europe. It will give more attention to all aspects of building construction, industrial design (including prefabrication), town and community planning, basic human needs and esthetic discrimination than is usually given.

Head of the new department is Fred Lasserre, M.R.A.I.C., formerly associate professor of design and architecture at McGill University, Montreal.

Instructors Needed

Additional instructors in architectural design, structural design, building materials and building equipment are needed at the schools of architecture for the second semester. Those interested in a career in the teaching profession should apply to Professor Paul Weigel, Secretary of the Association of Collegiate Schools of Architecture, Kansas State College, Manhattan, Kansas.

Cooper Union Exams

The Cooper Union, New York City, has shifted from its own competitive entrance examinations for Day Engineering School applicants to the nation-wide College Entrance Board Examinations for Engineering Schools. Entrance will continue to be on a competitive basis.

Entrance exams for day courses in both Engineering and Art Schools will be held in April; applications to take them will be received until March 10, 1947. Evening course entrance examinations will continue to be given in August, with applications received from May 1 to August 1.

Fellowship Offered

The College of Architecture and Design, University of Michigan, announces that the George G. Booth Traveling Fellowship in Architecture will be offered again this year, and the competition in design will be conducted during the two weeks beginning April 5, 1947. This com-

(*Continued on page 18*)

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THE RECORD REPORTS

(*Continued from page 16*)

petition is open to all graduates of the school who have not reached their 30th birthday on that date. Prospective candidates should write to the office of the College of Architecture and Design, University of Michigan, Ann Arbor.

Appointments

The School of Architecture, Syracuse University, has announced the appointments to the Cooperating Committee of Architects of William Lescaze, A.I.A., New York City, and James A. Britton, A.I.A., Greenfield, Mass. Other members of the committee, organized in 1936, are: Ernest Barott, Montreal, Canada; Louis J. Gill, San Diego, Calif.; William G. Kaelber, Rochester, N. Y.; L. Andrew Reinhard, New York City; Lorimer Rich, New York City; Conway L. Todd, Rochester, N. Y.

Rudard A. Jones, formerly an assistant professor of engineering and architecture at Kansas State College, has been appointed a research associate professor in the University of Illinois to carry on a new three-year study on planning and design for use of coal in home heating. His first interest will be to study the most effective use of existing coal-burning and coal-handling equipment and facilities, information which he will then apply to developing various types of house plans emphasizing basements and heating plant layouts. His work will be part of the recently announced research project arranged through the Small Homes Council at the University.

Safety Engineering

The Extension Division of the University of Wisconsin is offering a new course, Industrial Safety Engineering. The course contains 24 assignments covering subjects ranging from Introduction to Industrial Safety to Fire Causes and Prevention and Safety Standards. For further information address University Extension Division, Madison, Wis.

Course Strengthened

The architectural engineering course at the University of Colorado now requires two full years of architectural design in order to better train its students for work in architectural offices.

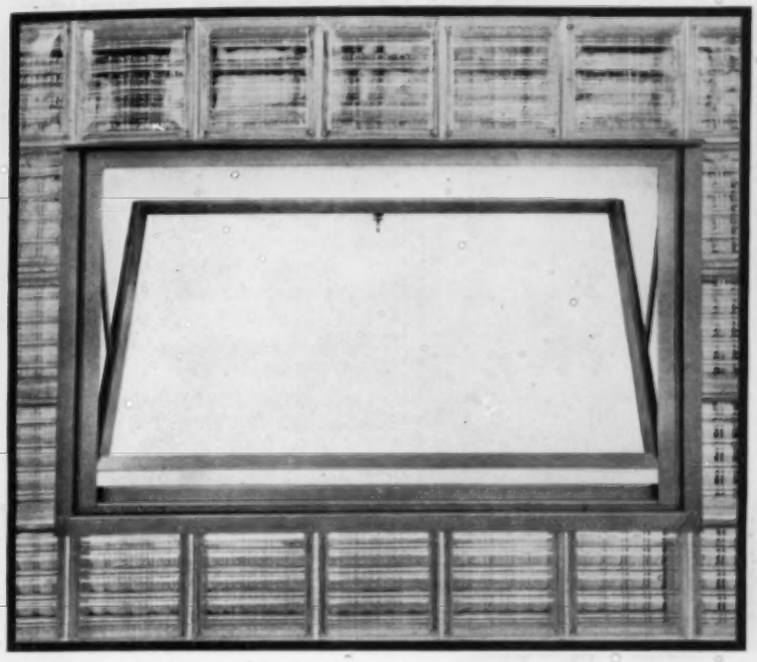
OFFICES NOTES

Offices Opened, Reopened

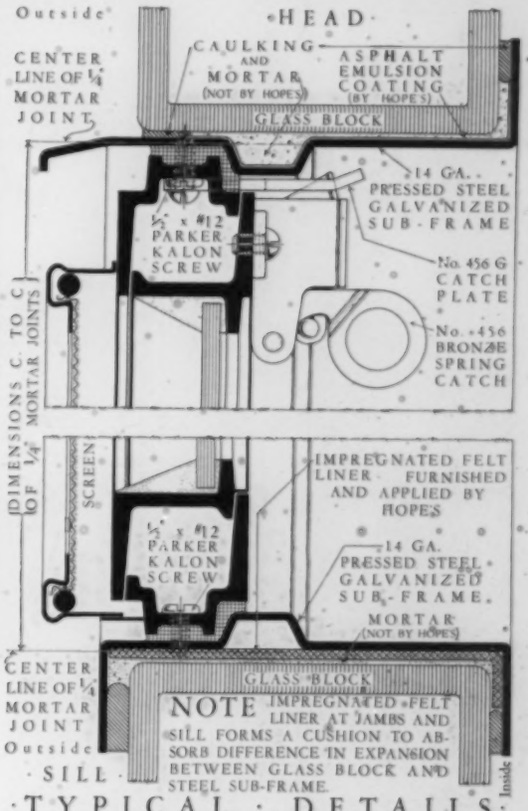
W. Edwin Glossop, A.I.A., formerly architect and construction engineer for Standard Oil Co., has resumed private architectural practice with offices at Room 1597, Starks Bldg., Louisville, Ky.

(*Continued on page 20*)

HOPE'S STEEL WINDOWS *and* BILTIN SUB-FRAMES *in* GLASS BLOCK



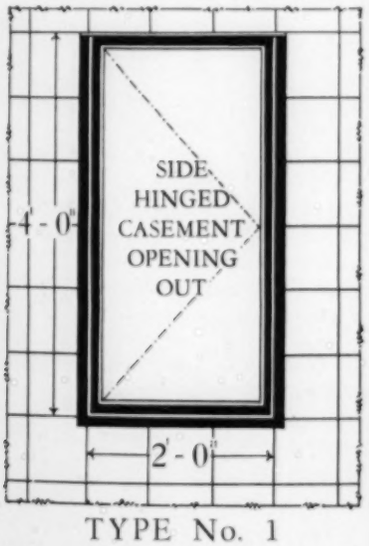
OUTSIDE VIEW OF A TYPE No. 3 WINDOW


Outside
HEAD
CENTER LINE OF ¼ MORTAR JOINT
CAULKING AND MORTAR (NOT BY HOPES)
ASPHALT EMULSION COATING (BY HOPES)
GLASS BLOCK
14 GA. PRESSED STEEL GALVANIZED SUB-FRAME
¼ x #12 PARKER KALON SCREW
No. 456 G CATCH PLATE
No. 456 BRONZE SPRING CATCH
DIMENSIONS C. TO C. OF ¼ MORTAR JOINTS
SCREEN
IMPREGNATED FELT LINER FURNISHED AND APPLIED BY HOPES
¼ x #12 PARKER KALON SCREW
14 GA. PRESSED STEEL GALVANIZED SUB-FRAME
MORTAR (NOT BY HOPES)
CENTER LINE OF ¼ MORTAR JOINT
GLASS BLOCK
NOTE IMPREGNATED FELT LINER AT JAMBS AND SILL FORMS A CUSHION TO ABSORB DIFFERENCE IN EXPANSION BETWEEN GLASS BLOCK AND STEEL SUB-FRAME
Outside
SILL
Inside

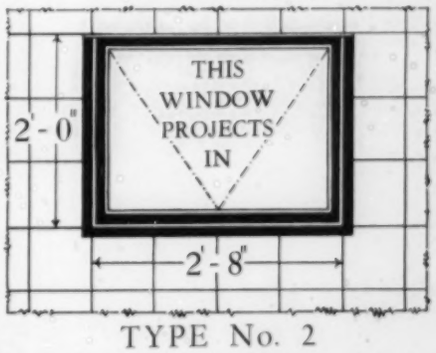
TYPICAL DETAILS
HALF FULL SIZE

In the layouts shown below Type 1 can be used with 6″, 8″ or 12″ blocks. Types 2, 3, 4 and 5 can be used with 8″ blocks only. Types 1, 2 and 3 are suitable for industrial and commercial buildings and Types 1, 4 and 5 are suitable for residential buildings. Sub-frames are manufactured from 14 gauge galvanized sheets and, when desired, can be shipped ahead of the windows; or if preferred, sub-frames with windows factory-inserted can be factory-shipped as self-contained units. Windows are prepared for the later reception of screens. Sub-frames and windows are bonderized and painted one coat of gray primer stoved on.

Dimensions given below are C. to C. of ¼″ mortar joints. If 3/16″ or 3/8″ joints are used these dimensions will change proportionately. For further information refer to our Publication No. 105.

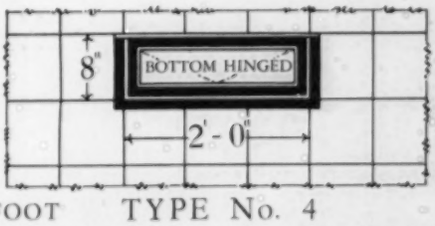


TYPE No. 1

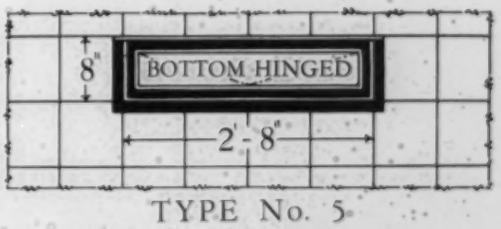


TYPE No. 2

TYPE No. 3



TYPE No. 4



TYPE No. 5

SCALE: HALF INCH TO A FOOT

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THE RECORD REPORTS

(*Continued from page 18*)

Oren Thomas Associates, Architects, have announced the opening of offices at 726 Cooper St., Camden, N. J.

Abraham Waronoff, Architect, has opened an office for the general practice of architecture at 1017 12th St., N. W., Washington, D. C.

New Addresses

The following new addresses have been announced:

J. Lloyd Conrich, Architect, 593 Market St., San Francisco 5, Calif.

J. S. Hamel, Engineer, and A. M. Gaynor, Associate, 241 W. 72nd St., New York 23, N. Y.

Paul Hyde Harbach, Architect, 70 Niagara St., Buffalo 2, N. Y.

Louis Hatkoff, Architect, 1050 Ave. of the Americas, New York, N. Y.

Office of Benjamin Earle Irby, Architect, 2288 Victoria St., Beaumont, Texas.

Earl R. MacDonald, Architect, 602 California St., San Francisco 8, Calif.

Rolf Sklarek, A.I.A., 962 N. La Cienega Blvd., Los Angeles 46, Calif.

Society of Industrial Designers, 48 E. 49th St., New York 17, N. Y.

Firm Changes

Com. Bradford N. Clark, CEC, U.S.N.R., recently placed on the inactive list, has been named by Eggers & Higgins, New York architects, as manager of the construction division.

Hervey Parke Clark and John F. Beuttler have announced the formation of a partnership for the general practice of architecture, with offices at 210 Post St., San Francisco 8, Calif.

Roscoe P. DeWitt has announced the association of A. B. Swank, Jr., A.I.A., in the firm of DeWitt & Swank, Architects, with offices at 2025 Cedar Springs Ave., Dallas 1, Texas.

Edward C. Epple, A.I.A., and Clinton D. Seaman, A.I.A., have announced formation of the firm of Epple and Seaman, Architects and Engineers, with offices at 15 Washington St., Newark 2, N. J.

C. Hood Helmer and Preston M. Cole have announced their association for the practice of architecture under the firm name of Helmer and Cole, Associate Architects. Address: 30 Pleasant St., Woodstock, Vt.

Fortuno Jerace, Architect, formerly in the store planning department of R. H. Macy & Co., has been appointed director of retail store design for Dorothy Draper, Inc., 38 E. 57th St., New York 22, N. Y.

Erard A. Matthiessen, Architect, has announced the formation of a new firm for the general practice of architecture in partnership with Verner W. Johnson

(*Continued on page 132*)

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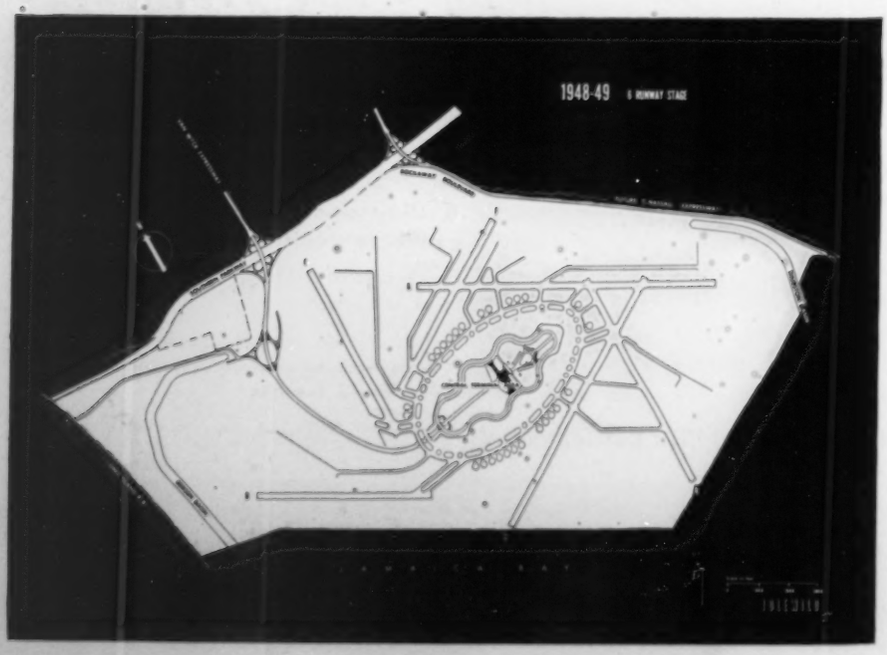
Gilbert Ask Photo

The Airport Authority's plan, developed by the Department of Marine and Aviation, calls for one administration building, 1700 ft. long, spanning the airport's inner oval. Left above, main entrance, showing central control tower; rendering by Hugh Ferris. Insert, photo of model

TWO VARIATIONS ON A THEME

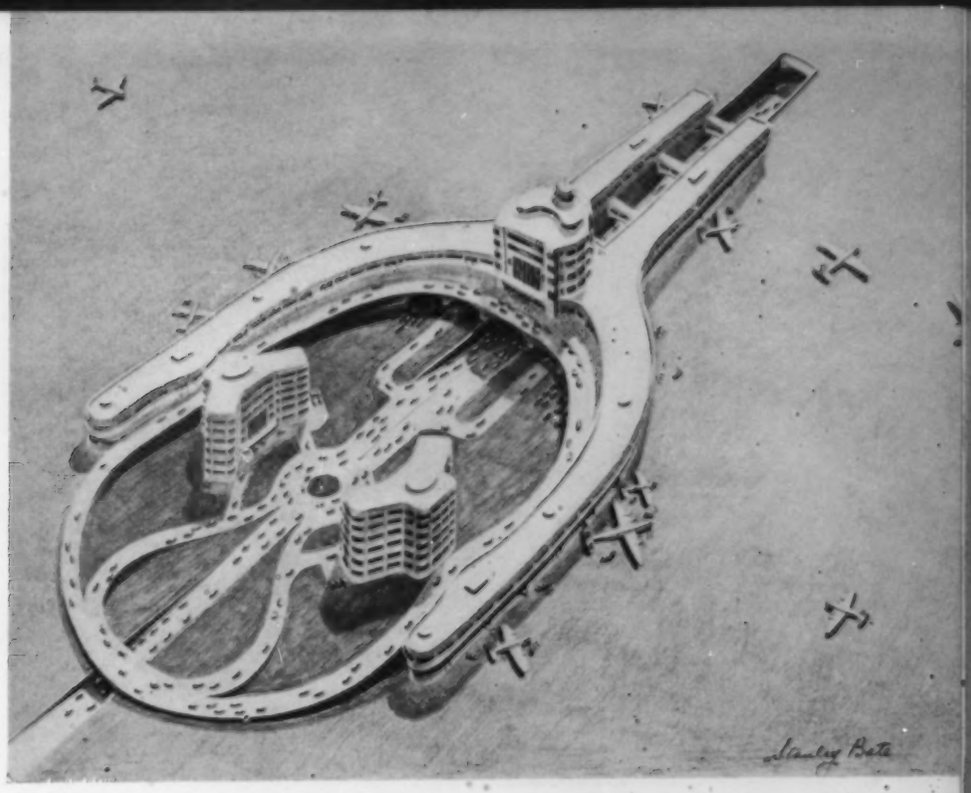
The Port of New York Authority and the New York City Airport Authority Offer Plans for Idlewild

The Airport Authority's inner oval is "scalloped" to permit more plane loading stations



THE two recently announced proposals for the development of the central area of the Idlewild Airport in Queens, New York, though basically similar in concept, offer a number of interesting variations in detail. Each of the plans is based on a tangential system of runways around a central oval. Each calls for the main approach to the airport over the Van Wyck Expressway through Queens, and projects an intramural bus system to link the administration building with the plane loading stations around the periphery of the oval. It is in the development of the terminal area itself that the two sets of plans are chiefly at variance.

The Port of New York Authority proposal, first of the two to be made public, specifies two separate terminal structures, one at each end of the inner oval (see plan). The larger of the two, at the westerly end, would be the domestic terminal; with 30 plane loading positions and comprising 1,350,000 sq. ft. of floor space, it would be some 10 times the size of the present administration building at LaGuardia Field. The international terminal, at the easterly end, would have 12 plane loading positions and would house federal government services such as public health, customs and immigra-



Two separate passenger terminals are the recommendation of the Port of New York Authority. Drawing at right is of the Domestic Terminal, larger of the two, at western end of inner oval. An airport hotel and a 250,000-sq.-ft. office building are included within this area

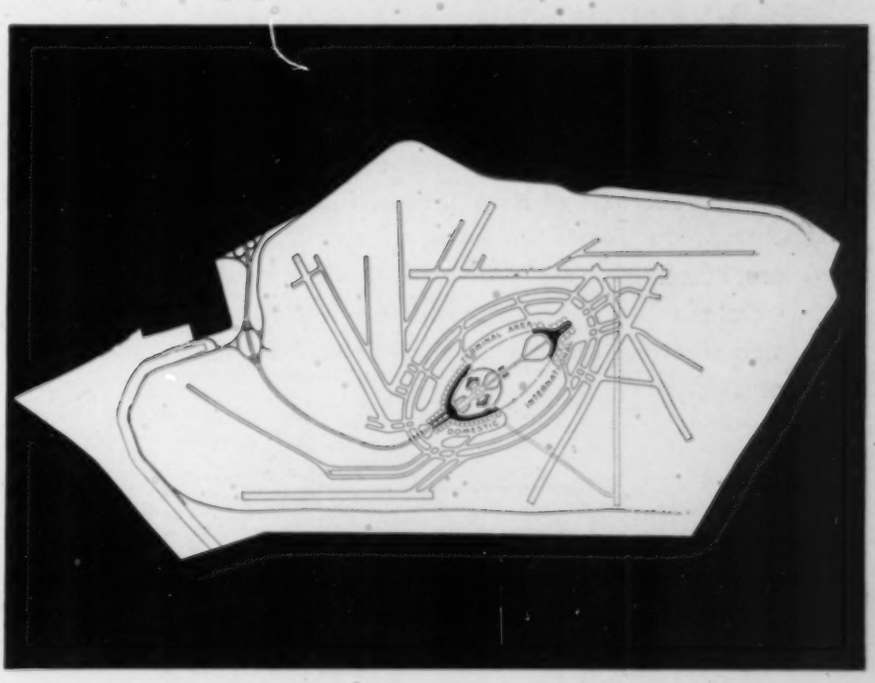
tion. Each would have its own passenger facilities and concessions.

The plans submitted by the Commissioner of Marine and Aviation and adopted by the New York City Airport Authority, on the other hand, propose one central terminal spanning the inner oval from north to south. By means of a "scalloping" of this central area, 86 plane loading stations, all connected to the administration building by an enclosed walkway, are provided around the periphery. The main lobby of the administration building is directly over the access road (an extension of the Van Wyck Expressway), and connected by escalators to the roadway platforms. Concessions are planned to line both the arcades leading from the main lobby to the observation platforms overlooking the international plane departures and arrivals at each end of the 1700-ft.-long main building. Public health, immigration and customs inspection services would be housed in separate buildings at the apron edge. An observation platform, formed by the roof of the covered peripheral walkway, would afford a continuous area for concession stands along its full length. Restaurants planned for the ends of the main building would be terraced to afford a maximum view of airport activities.

The two proposals, now before the New York Board of Estimate for appraisal and decision, are conspicuously different in respects other than the central area. The Port of New York Authority plans, much the more elaborate throughout, call for the expenditure of almost twice as much as do the Airport Authority's — a factor which may well be taken into consideration by the Board of Estimate. The Port Authority, furthermore, plans to at first lease and then buy outright not only Idlewild but La-Guardia as well. The Airport Authority would return them both to the city, presumably debt-free, in 40 years.

The Port of New York Authority plans were developed by the Authority's own staff: Austin J. Tobin, executive director; John C. Evans, chief engineer; Walter P. McQuade, architect for the engineering department. The Airport Authority proposal was prepared for the Department of Marine and Aviation by Clarke, Rapuano & Holleran, consulting engineers, Harrison & Abramovitz, architects, and Downer, Green & Carillo, consulting engineers, working with Frederick G. Reinicke, Commissioner, and Lewis H. Rabbage, Chief Engineer, of the Marine and Aviation department.

The Port Authority segregates international traffic at the eastern end of central oval



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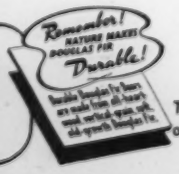

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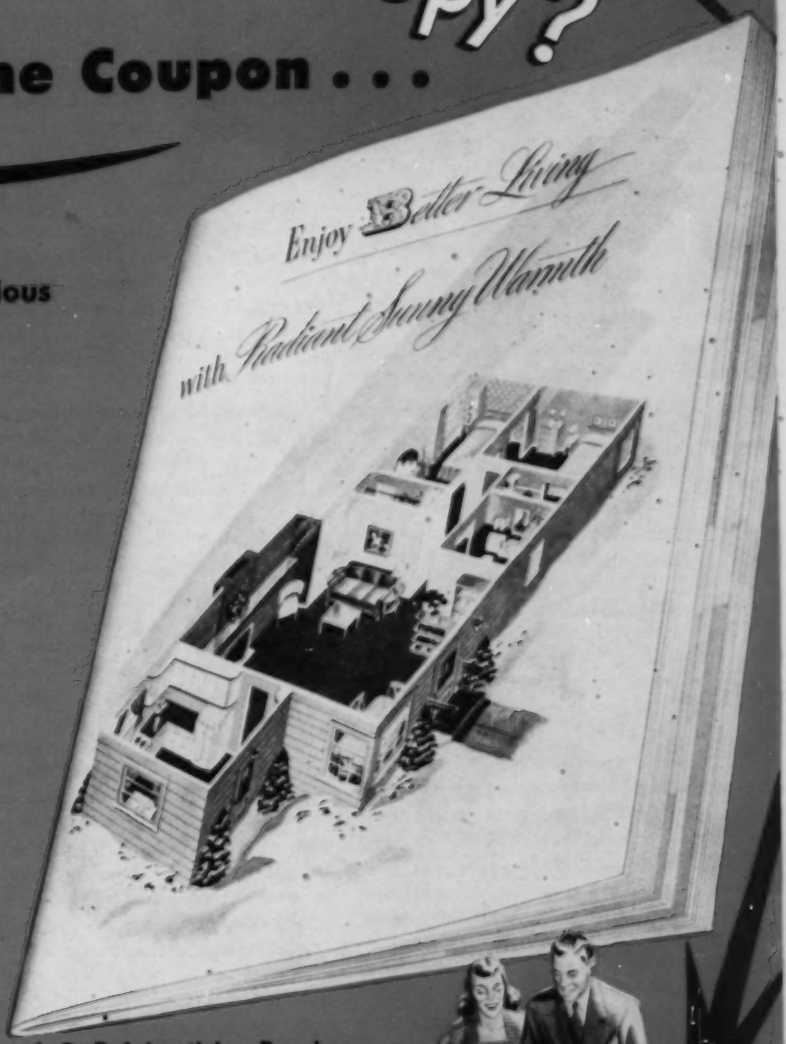

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REQUIRED READING

DESIGNED FOR SELLING

Modern Store Design. By Gene Burke and Edgar Kober. Los Angeles 13, Calif. (Pershing Sq. Bldg.), Institute of Products Research, 1946. 9 by 12 in. 144 pp. illus. $12.00.

Gene Burke and Edgar Kober have specialized in store design as a team for 13 years, and separately for even longer. They know all the ins and outs, the problems and the peculiarities of merchandising; they know, perhaps even better than does the store owner himself, what it takes to move merchandise at a profitable rate.

"Stores do not grow old from use or natural wear," they say; "stores die because they become out-moded, old-fashioned, or otherwise obsolete from a style sense. The modern merchant sells style and modernity first of all."

How that style and modernity best can be achieved is the subject of this book. Starting with the preliminary merchandising research which will answer such questions as the size and type of building required, the overall design and the materials to be used, the volume carries through in considerable detail straight to the interior appointments.

Obviously a book of this size cannot cover the whole subject of store planning exhaustively. The authors themselves point this out. But here is a great deal of useful information which the store owner and architect will not readily find elsewhere. And, while specific detail largely has had to be omitted, enough of it has been included to lead the reader's thoughts into the most productive channels. The volume, in fact, is full of leading questions intended to make the reader think his problems through before he starts to plan. Every possible need of the store is discussed at least briefly; suitable exterior and interior materials are suggested; placement of the various facilities is analyzed; and a sizable group of typical details—of show window dimensions, story heights, aisle widths, fixture sizes, etc.—is included. There is even a table of cost percentages based on typical new and modernization projects.

HOUSING ANALYSIS

The Future of Housing. By Charles Abrams. New York 16 (49 E. 33rd St.), Harper & Brothers, 1946. 6 by 9 in. xx + 428 pp. illus. $5.00.

A serious problem deserves serious study, and that is exactly what Charles Abrams has here given the whole subject of housing. The thoroughness of his treatment, its comprehensiveness and logic, make this a highly important book. It is not one, however, to pick up casually and idly thumb.

Mr. Abrams set himself a hard task: to answer the question, "What holds back a housing program for America?" To answer it he goes back to the beginnings of the country and tells how building restrictions and slums first came into being, how a feeling of social responsibility slowly was awakened. In no uncertain terms, pulling no punches, he states the current housing problem. He classifies and describes slums, explains their existence in statistics-backed terms. He considers home ownership, its desirability and its dangers. And he studies from every angle the role the government has played and the role he feels it should play in the housing picture.

The aims of a proper housing program Mr. Abrams presents as follows: (1) a democratic program; (2) a revitalized building industry; (3) housing for low-income families; (4) urban reconstruction; (5) rural slum clearance; (6) sound home ownership; (7) adequate rental housing; (8) homes for veterans; (9) a sound mortgage system; (10) stabilization of the real estate pattern. Each of these he discusses in detail, winding up with a chapter on the agencies required to carry out such a program.

Mr. Abrams' conclusions throughout are logically drawn and very much to the point. Public housing he finds essential for the lowest income bracket, but he wants it to be divested of public control, tenant management taking over as soon as practicable. Public housing projects, he insists, must be merged with their environments, not isolated and branded. Rents must be based on income, with eviction not required the moment income passes a certain level. Government participation in housing he considers inescapable, but that participation should be chiefly on the local government level rather than the national.

A CITY MATURES

Georgian London. By John Summerson. New York (597 Fifth Ave.), Charles Scribner's Sons, 1946. 5½ by 8½ in. xii + 316 pp. illus. $5.00.

"Taste in architecture," says Mr. Summerson, "reached London about 1615: taste, that is, in the exclusive, snobbish sense of the recognition of certain fixed values by certain people. Taste was a luxury import from Italy, received and cherished by a small group of noblemen and artists whose setting was the not very polished Court of James I." Sponsor was Inigo Jones, just returned from his third visit to Italy, and newly appointed Surveyor General to the King.

A century later George I ascended the throne and the so-called Georgian period of English architecture was ushered in with a building boom which was to last for 116 years.

In between those two events—the acquisition of taste in architecture and the start of the building boom—four-fifths of London had been destroyed in the Great Fire of September, 1666. Following that disaster an Act for the Rebuilding of the City of London had been passed, noteworthy chiefly because for the first time it standardized house-building. In the six "high and principal streets," for example, houses were to be four stories high; in the "streets and lanes of note," three stories; and in "by-lanes," two stories. Walls must be of brick or stone, of a precise thickness; ceiling heights were fixed; the larger houses must have "a balcony at first floor level and a 'pent-house' immediately below, protecting the pedestrian from the fall of rainwater from the eaves." Sir Christopher Wren was named Principal Architect for the rebuilding. His plan, however, never was carried out.

Mr. Summerson has written a lively and interesting account of the development of London and the men responsible for it. Speculative builders, architects, landowners, stride through these pages in vivid style: men such as John Nash, Nicholas Barbon, Benjamin Dean Wyatt, Sir John Soane, the fourth Earl of Bedford. An appendix lists existing Georgian buildings in London, and reports the damage done to many of them during the recent war.

NIGHTMARE DE LUXE

Mr. Blandings Builds His Dream House. By Eric Hodgins. New York (1230 Sixth Ave.), Simon & Schuster, 1946. 5½ by 8 in. 238 pp. illus. $2.75.

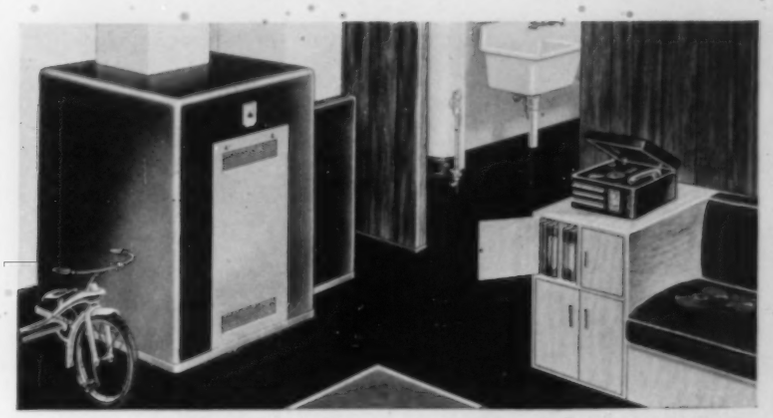
Mortimer Snerd, when asked one night a few weeks ago how he could *be* so stupid, replied, "I have a man who helps me." So does Mr. Blandings; but his Edgar Bergen is not always quite so subtle as is Mortimer's.

First and foremost this farcical tale of the smart ad man who started out to buy a modest little country home for $15,000 or $20,000 and wound up with a $56,263 estate is meant to be funny. And funny it is, from the first page to the last. But no ad copywriter earning Mr. Blandings' apparent salary could possibly be quite so gullible as Mr. Blandings. The poor bloke is taken in by everyone he meets. He does everything backwards. He makes every mistake anyone ever has made before, and a good many brand new ones.

The tale of woe starts when Blandings buys, for a ridiculously high price, a rickety old farmhouse which subsequently has to be torn down, and "about 50 acres" of land which in the final

(*Continued on page 30*)

Performance that's Efficient and Economical...



The **WESTMORELAND** Oil Fired Winter Air Conditioner with its smart, trim lines, lends beauty and distinction to this basement game room. Available as a completely coordinated oil heating unit with American-Standard's own Arcoflame Burner, or for use with any other standard burner. Made in 7 sizes, with capacities at the register ranging from 95,000 to 330,000 Btu. For homes of practically any size.

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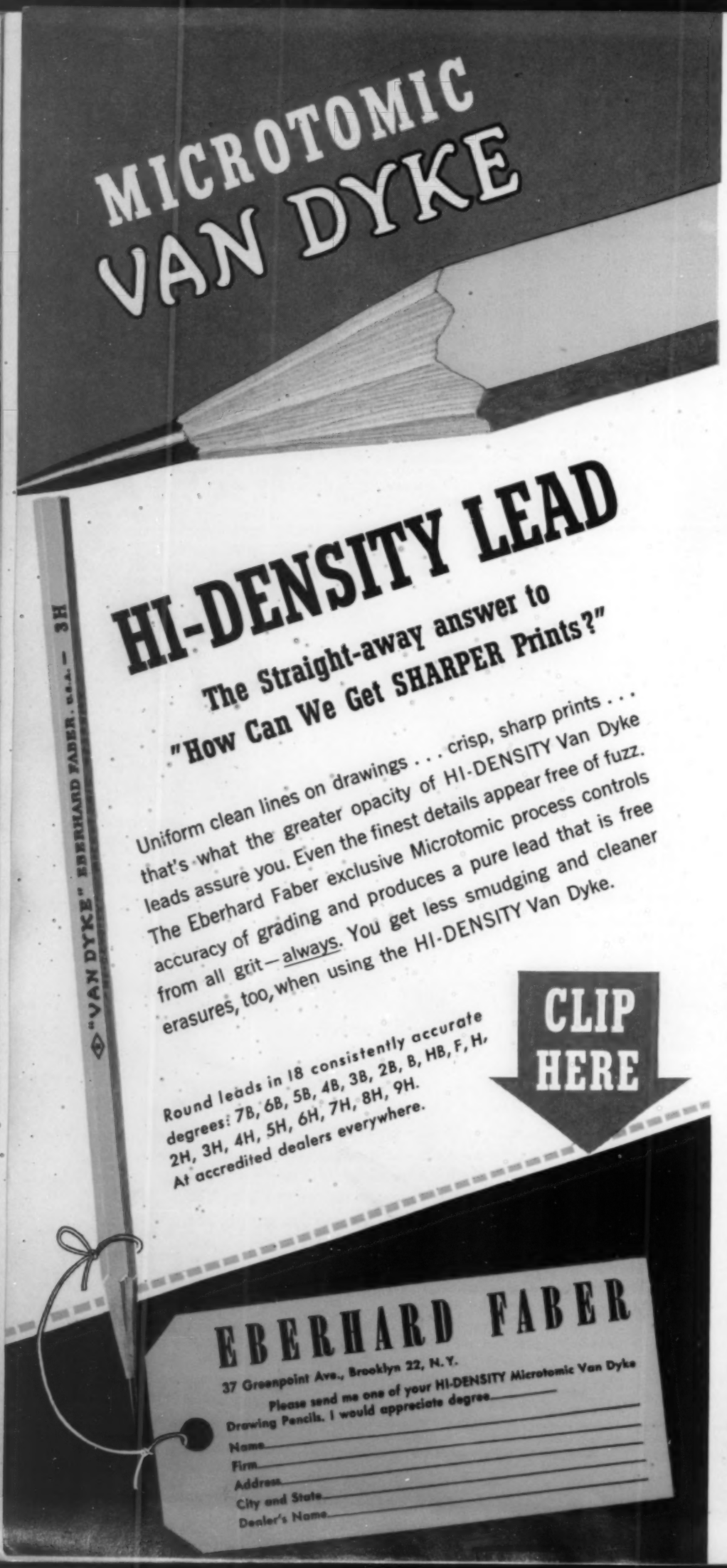
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REQUIRED READING

(*Continued from page 26*)

analysis prove to be only 31½ acres. He retains an architect about whom he knows nothing (except that he was a pleasant cocktail hour companion) to remodel the old house, then kicks him out abruptly, and gets into trouble thereby, when the construction engineer he tardily consults brutally recommends tearing the old relic down. He then gives another architect the job of designing the Blandings dream house, a modest structure to cost about $15,000, and is shocked when the bids come in to find that he has plans for a "mansion" costing twice that amount. This, be it noted, despite the architect's repeated warnings of increasing costs as more and more Blandings dreams were incorporated into the plans. He gets into trouble with the contractor when that harassed individual quite properly charges him for all the changes he and his wife insisted upon but didn't realize they were making as the building progressed. He has an artesian well dug at so much a foot (the water is much further down than he had expected it to be), only to have a fine bubbly spring make its appearance right in the foundations of the new house. So many things go wrong that not only Mr. Blandings but the reader as well is discouraged long before the house is completed.

From the point of view of the architectural profession and the building industry this might be an unfortunate book: it could quite easily turn its readers away from their plans for building. But even a Mortimer Snerd should be smart enough to realize that while in real life all of Mr. Blandings headaches can and do occur, they never in the world are all going to happen to any one person and most can be obviated by plain common foresight and competent architectural advice. The only way to take this book is to enjoy it and not look for morals or arguments. It is whimsical satire and nothing more. And that, undoubtedly, is the way it was meant.

PLANNING ANNUAL

American Planning and Civic Annual: 1945. Edited by Harlean James. Washington, D. C. (901 Union Trust Bldg.), American Planning and Civic Assn., 1946. 6 by 9 in. xiv + 226 pp. $3.00.

Publication of this latest Planning Annual was delayed to permit inclusion of the papers presented at the Citizens Conference on Planning held at Dallas last April. The delay was a happy one: these papers, the verbatim reports of the discussions which followed them, and the many other papers in the volume form an excellent summary of the year's planning progress the country over.

ARCHITECTURAL

RECORD

THE CAPITOL OF ONE WORLD

THE new and, we hope, permanent home for the United Nations is the world's most important architectural project. How it should be designed is therefore Architectural Problem No. 1. It is not surprising then that solutions for this problem should be suggested and advocated, discussed, and criticized, not only in private professional conversations, but in the public press, in many a "letter to the Editor," yes, in editorials too (sic). This is as it should be in a democratic world. It shows our sincere interest and intense desire that the design of this Capitol shall be worthy of its purpose. Like all architectural projects, the problem (and the suggested solutions) can be broken down into questions of "Who, what, where, when, how much?"

• "*Where?*" was the first question settled, settled with bewildering suddenness, considerable consternation, and natural disappointment. Of all sites considered, under a policy of consider all sites, visit all sites, report all sites, New York's east side site was the last considered, the least considered, but the most persuasively presented. Announced site criteria were quickly abandoned. Site size shrank from thousands of acres to some seventeen. A city rising within a city, lofty, compact, efficient.

• "*Who?*" has been settled too, in major part, with the appointment of our own Wallace K. Harrison to be Director of Planning, a logical and fortunate choice. And further, to contribute ideas and inspiration, some ten leading architects of other countries will be selected. Who these men will be is still an open question as this is written. (Le Corbusier, Robertson and Niemeyer have been mentioned as three possible consultants.) They will be chosen presumably for their known, proved creative ability rather than through a special time-consuming and perhaps inconclusive design competition.

• "*What?*" is to be built should be clearer now that UN organization has been at work. In the light of recent experience, therefore, the physical facilities to be provided for its expeditious functioning have become more clearly defined than was indicated in the imaginative, extensive, but unrealistic, early outlines. Flexibility and provisions for growth and extension undoubtedly will be taken into account.

• "*When?*" will depend on how fast preliminary schemes and models can be produced and decisions reached. Much time has been saved by the direct appointment of collaborating firms instead of by architectural competitions.

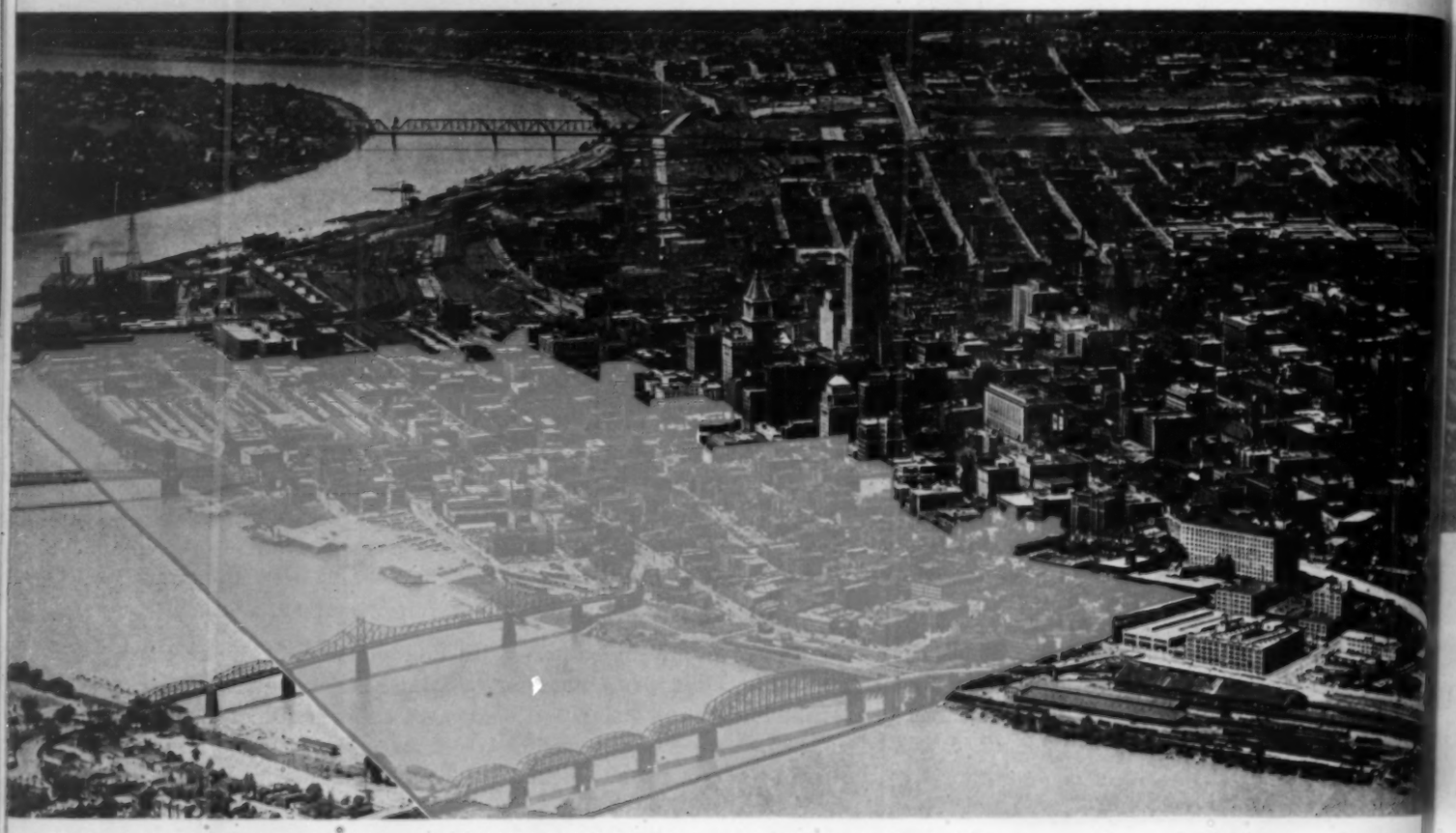
• "*How much?*" should not be a deciding factor in the design. The best possible design to implement the functions of the UN will naturally be the most economical as well as the most expressive and inspiring in character. But no cost is too large to provide the meeting place for the world's greatest instrument for peace and justice. The start has been made, the program of organization and procedure is logical, much of the best of the world's design and technical talent can be brought to bear. We believe the architectural result will be an outstanding achievement, a noble expression of its purpose and of the civilization it will serve to foster and project. Hail and God-speed to the creators of the Capitol of the World!

Kenneth K. Stowell

EDITOR

RIVERFRONT REDEVELOPMENT FOR CINCINNATI

The Proposed Metropolitan Master Plan for the Downtown Riverfront



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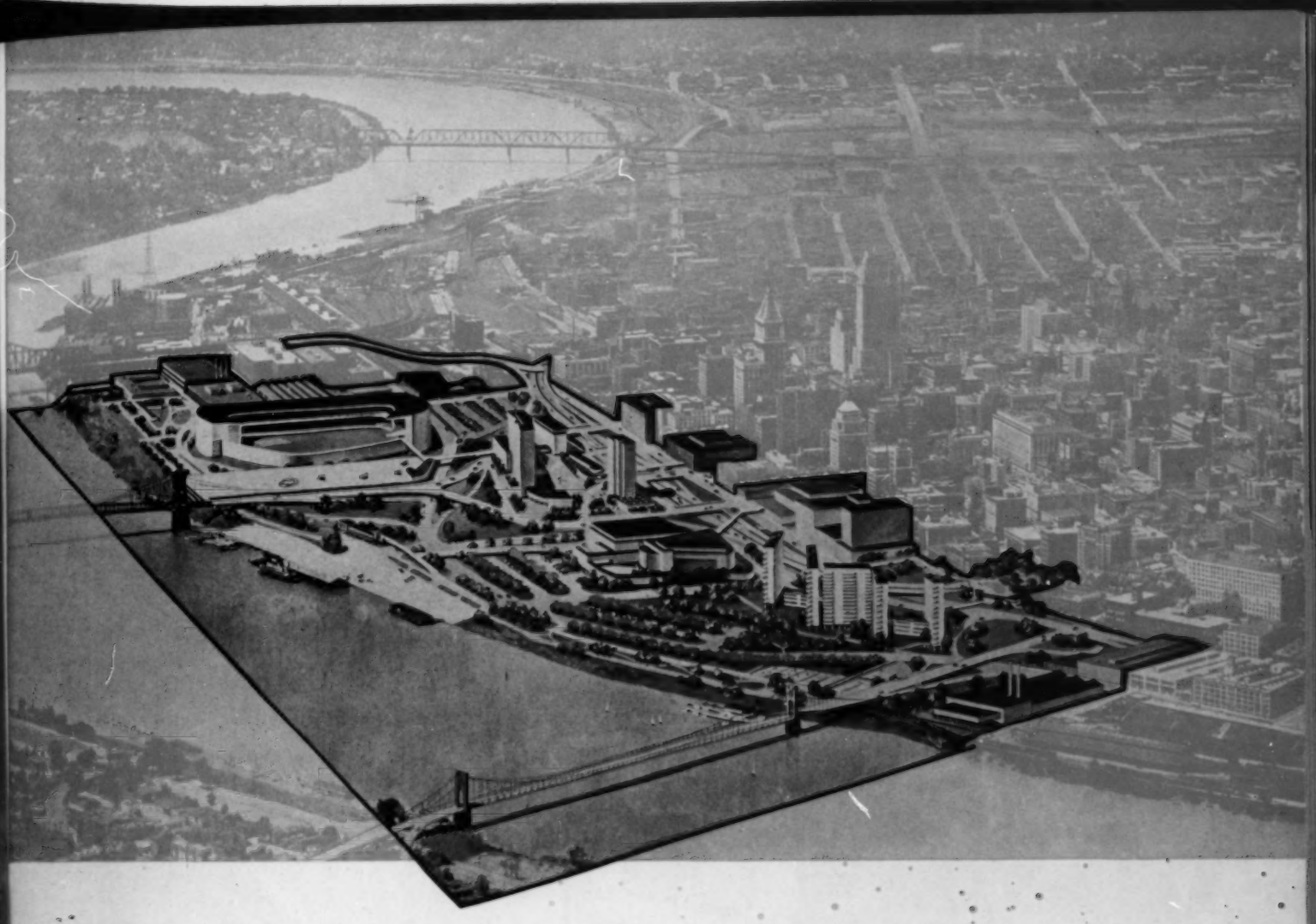
DELINEATION BY

T. MARSHALL RAINEY — *Architect*
JOHN F. KIRKPATRICK — *Landscape Architect*
DAN STEIBLE — *Editorial Chief*

PIONEERS plied the Ohio on their trek to the rich fast-developing West. Cincinnati grew, a natural trading center. The riverfront bustled with flat boats, stern-wheelers, sidewheelers. The riverfront of 1820 was the heart of the growing commercial and industrial Cincinnati. Then came the railroad in 1843. Floods came too, and gradually the river lost its place of prime importance as the great artery of transportation. "The Bottoms" lost its prestige, ceased to be commercially industrially important, deteriorated into semi-stagnation and slum, threatened the adjoining business area.

But constructive imagination, realizing its tremendous potentialities, studying its problems, set to work to redeem, reclaim and redevelop the old Bottoms into a vital asset, a center of community life, replete with facilities for government, sport and recreation, music, cultural gatherings, residence, and transportation. The economics of this long-term plan of development have been worked out with equal vision.



The downtown riverfront area as it is today is shown in red on the opposite page. Above in black is "The Bottoms" as it should appear when transformed on the basis of the studies and recommendations of the City Planning Commission. Park, recreation and boating facilities line the river bank. Areas subject to flood are used for parking lots and open spaces which would not be damaged by occasional inundation. Selective flood protection is provided by structural design, earth-fill and the location of the major units back from the river on higher ground. Main traffic arteries are thus protected. The following pages show the disposition and functions of the various units

"The riverfront forms the logical meeting point of all the main traffic arteries and the logical terminal for motor traffic. It is potentially the most accessible area in Metropolitan Cincinnati and is adjacent to the most highly developed portion of the business district. In short, it lies close to the focal point of the city's life.

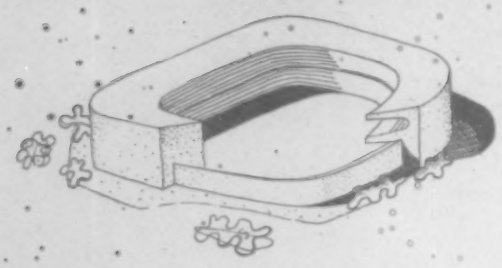
"Here should be provision for interchange of traffic and for activities which serve the business district, accommodations for large popular gatherings, parking lots and garages, and bus terminals. Here should be facilities for use of the river for pleasure boating, commercial navigation, and other purposes. Here, for enjoyment by residents and visitors, should be the center for esthetic and cultural developments which symbolize the civic life of the whole community."

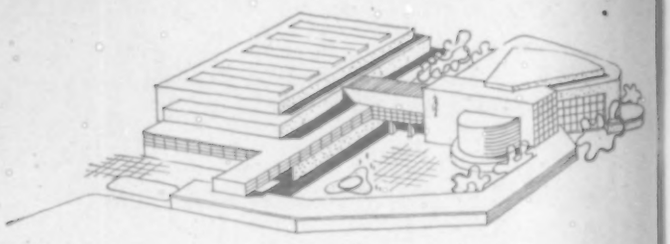
The redevelopment of this area has been planned as a whole although the plan may be put into effect unit by unit. The plan is, therefore, of necessity bold in conception. Within the framework of the basic plan, the detailed design of component elements lends itself to such modification as time may require.

Freed from the rectangular street gridiron of the present riverfront, the design attains a flexibility which makes possible a pleasing transition from the formal pattern of the downtown business district to the openness of the river's expanse.

The various units included are so designed as to secure the best inter-relation of function within each group. At the same time a close relationship between the redevelopment as a whole and the business district is achieved.

To the citizens of Cincinnati is now submitted a comprehensive, convincing, easily-grasped-and-understood presentation of a well-conceived, thoroughly-studied master plan for converting an economic liability into a positive asset to the wholesome life of the city.



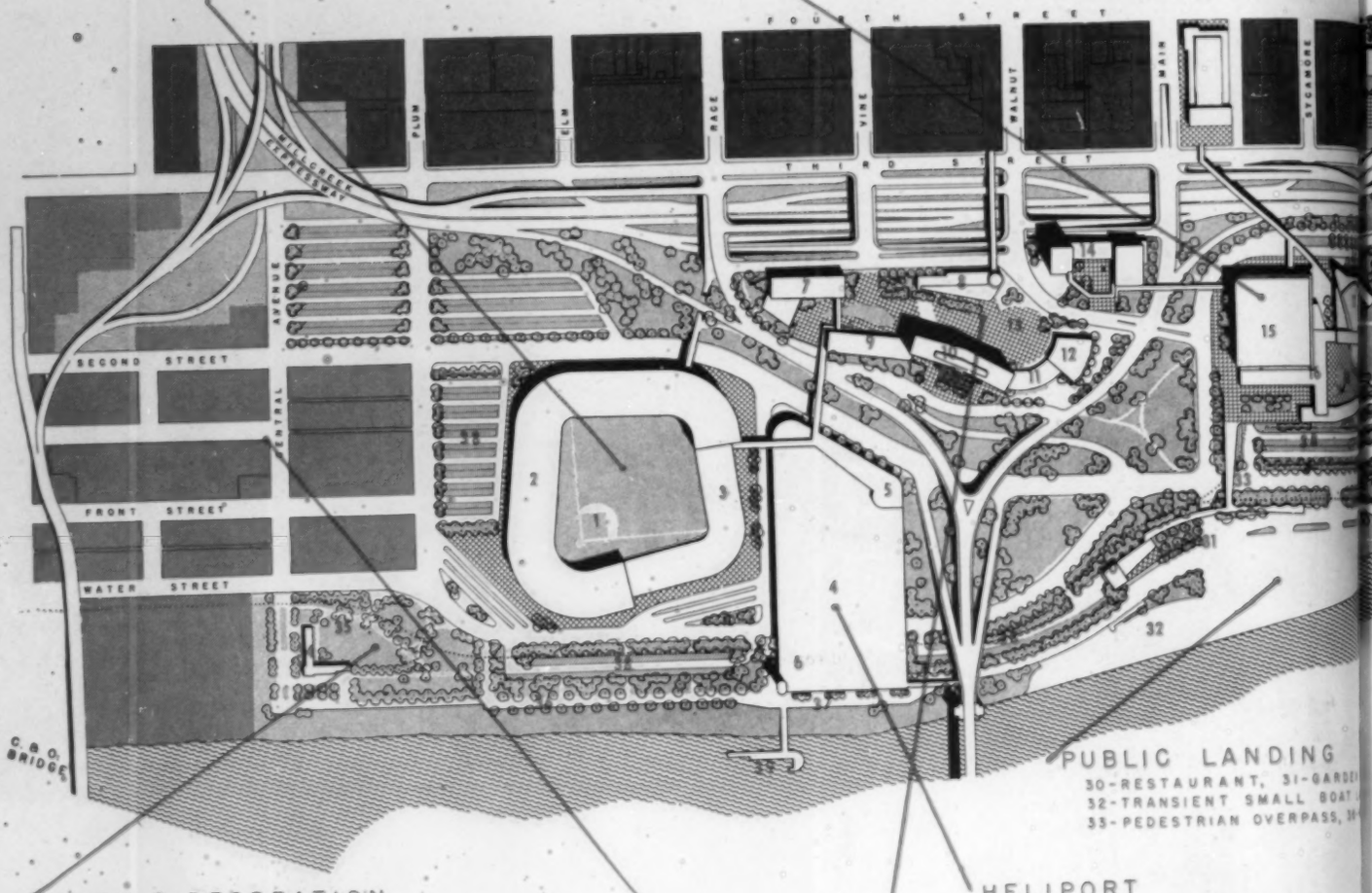


STADIUM

1 - PLAYING FIELD, 2 - GRANDSTAND
3 - BLEACHERS, 38 - PARKING AREAS

CONVENTION & RECREATION CENTER

15 - EXPOSITION HALL, 16 - INDUSTRIAL DISPLAY
17 - AUDITORIUM, 18 - PLAZA - PARKING BELOW, 40 - GARAGE



PUBLIC LANDING

30 - RESTAURANT, 31 - GARDEN
32 - TRANSIENT SMALL BOAT
33 - PEDESTRIAN OVERPASS, 34

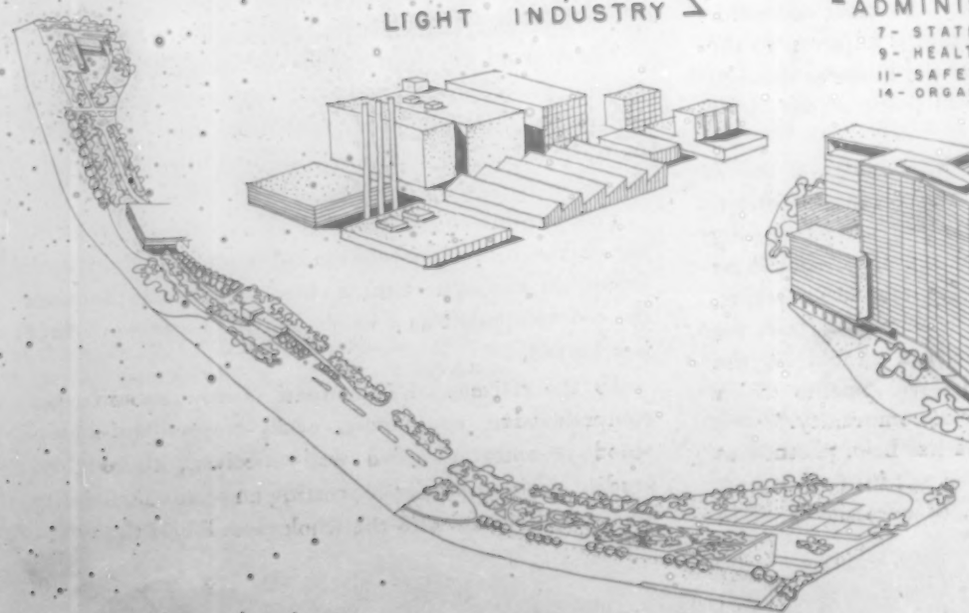
HELIPORT

4 - LANDING DECK - 2 LEVEL PARKING
5 - TERMINAL BUILDING, 6 - CONTROL

PARK & RECREATION

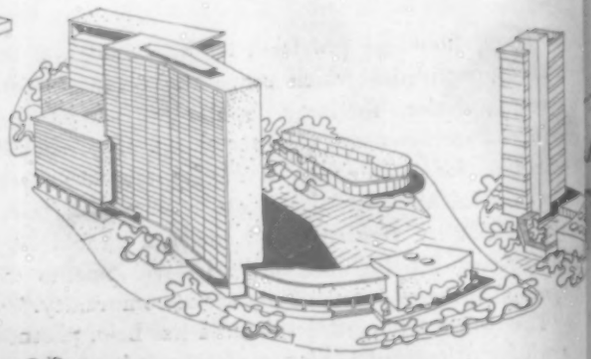
34 - SHELTER HOUSE, 35 - PICNIC AREA
36 - PROMENADE, 37 - CONCESSIONS
38 - PARKING, 39 - REGATTA BASE

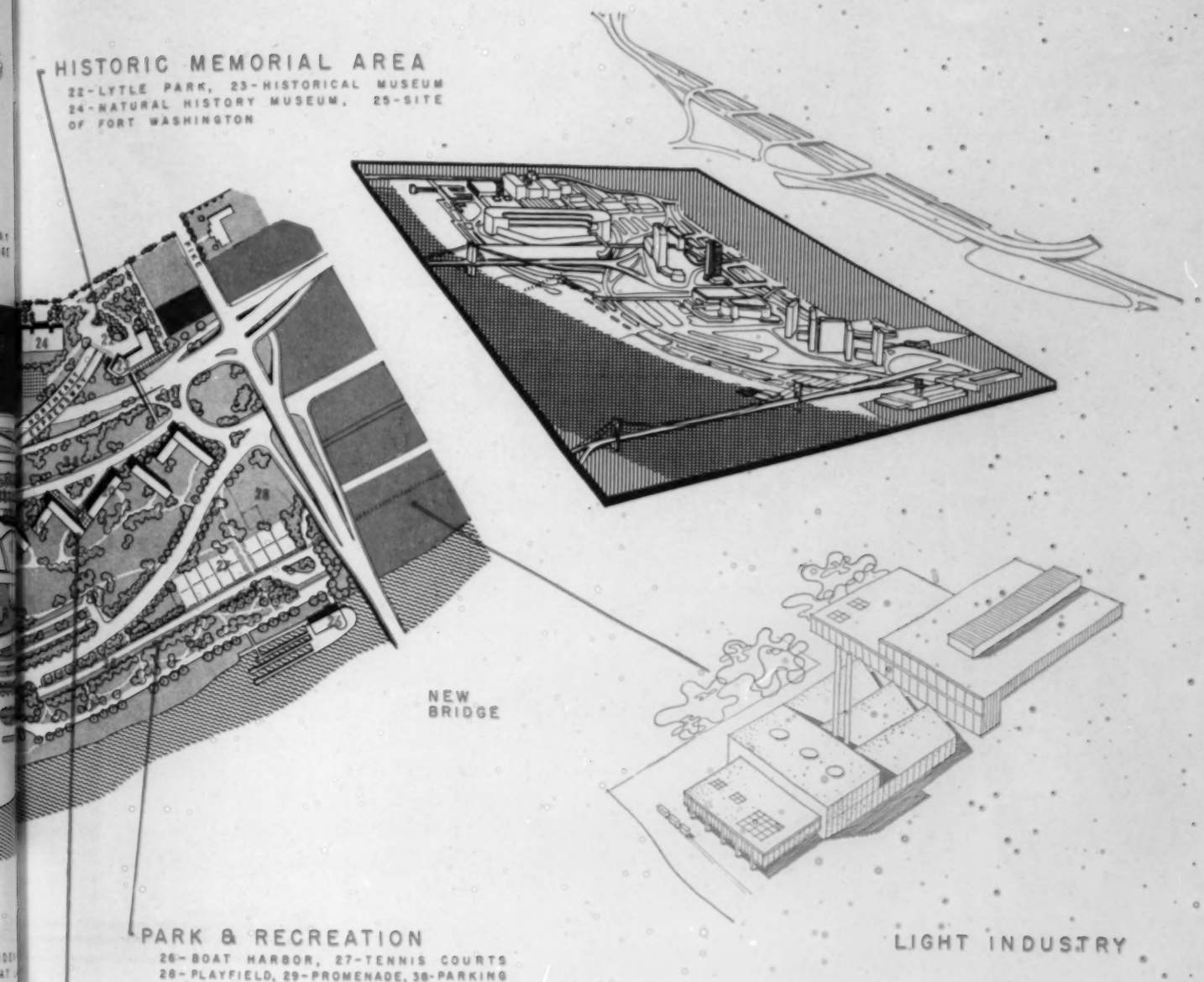
LIGHT INDUSTRY

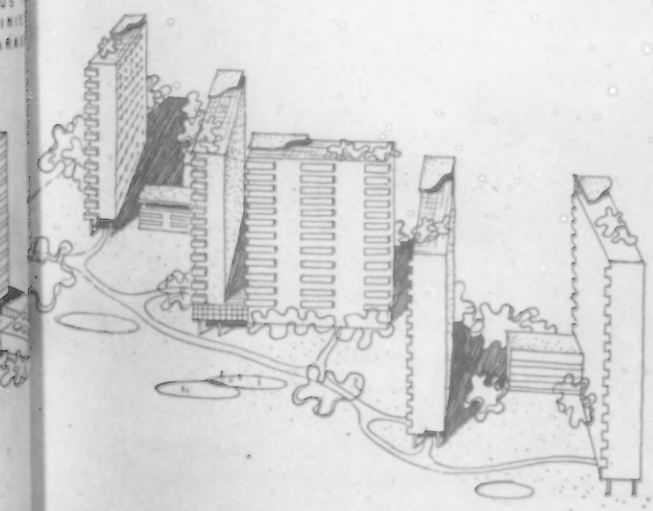


ADMINISTRATION CENTER

7 - STATE OFFICES, 8 - INTERREGIONAL BUS
9 - HEALTH-WELFARE, 10 - MUNICIPAL ADMIN
11 - SAFETY, 12 - COURTS, 13 - PLAZA - GARAGE
14 - ORGANIZATION BUILDING

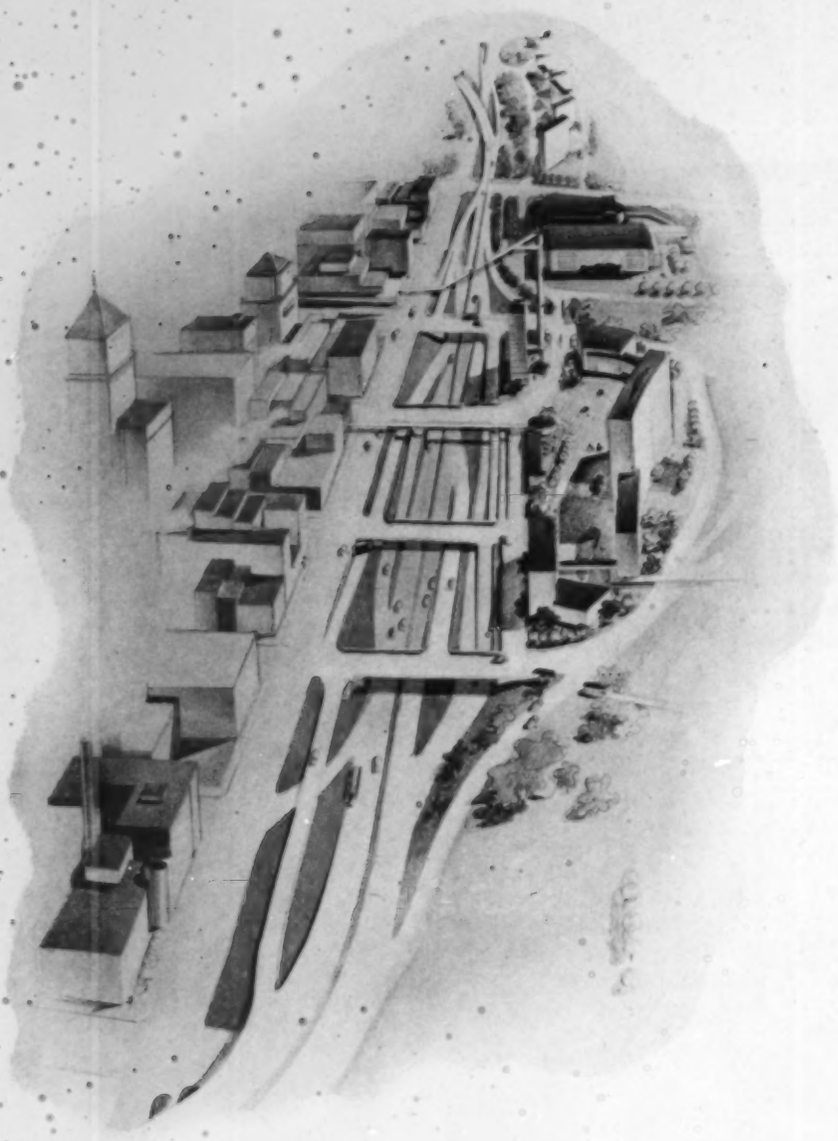


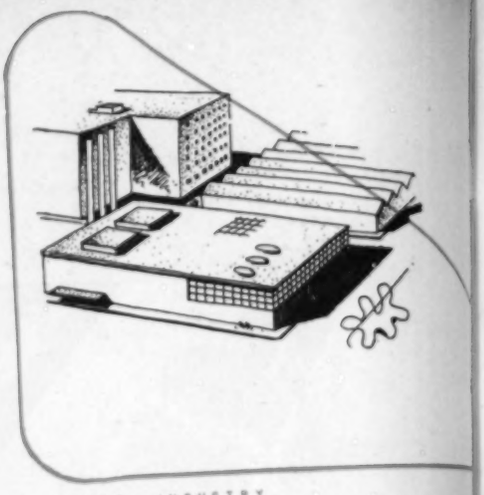




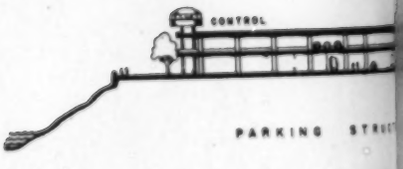
THE GENERAL PLAN

To grasp the extent, nature and logic of the redevelopment scheme as a whole, this clear diagrammatic plan is accompanied by telling sketches of the various types of buildings involved. The illustrations throughout the presentation are the work of T. Marshall Rainey and John F. Kirkpatrick who are members both of the Planning Commission and of the design staff of the Department of Architecture of the University of Cincinnati. They indicate the possibility of developing a unified contemporary architectural character with an interesting variety in treatment determined by the use-requirements and location of the different buildings.

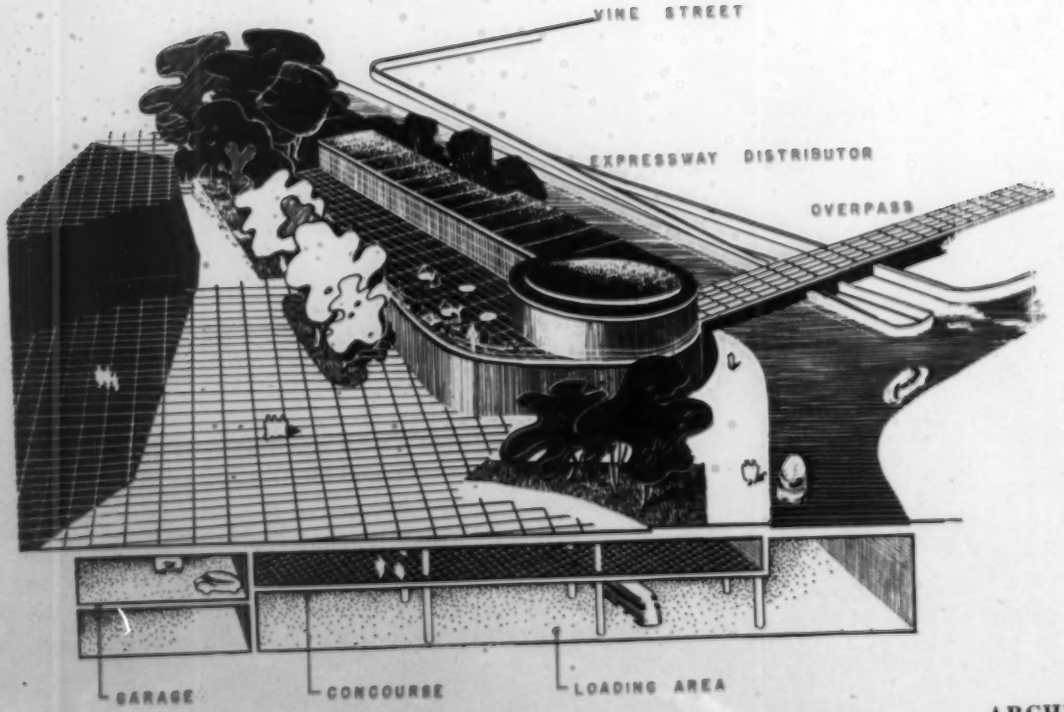




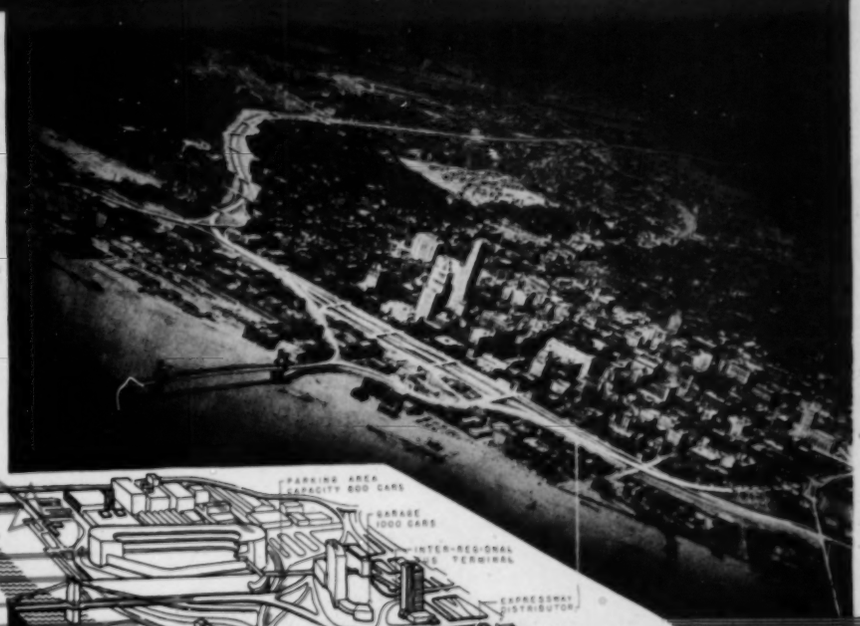
LIGHT INDUSTRY
PARKING AREA - CAPACITY 330 CARS
PARKING AREA - CAPACITY 160 CARS
PARKING STRUCTURE - CAPACITY 2000 CARS
PARKING AREA - CAPACITY 65 CARS
TRUCK BYPASS
PARKING PUBLIC LANDING - CAPACITY 500 CARS
PARKING AREA & STRUCTURE - CAPACITY 2000 CARS
PARKING AREA - CAPACITY 300 CARS
PARKING AREA - CAPACITY 110 CARS
P.R.R. INTERCHANGE TRACK



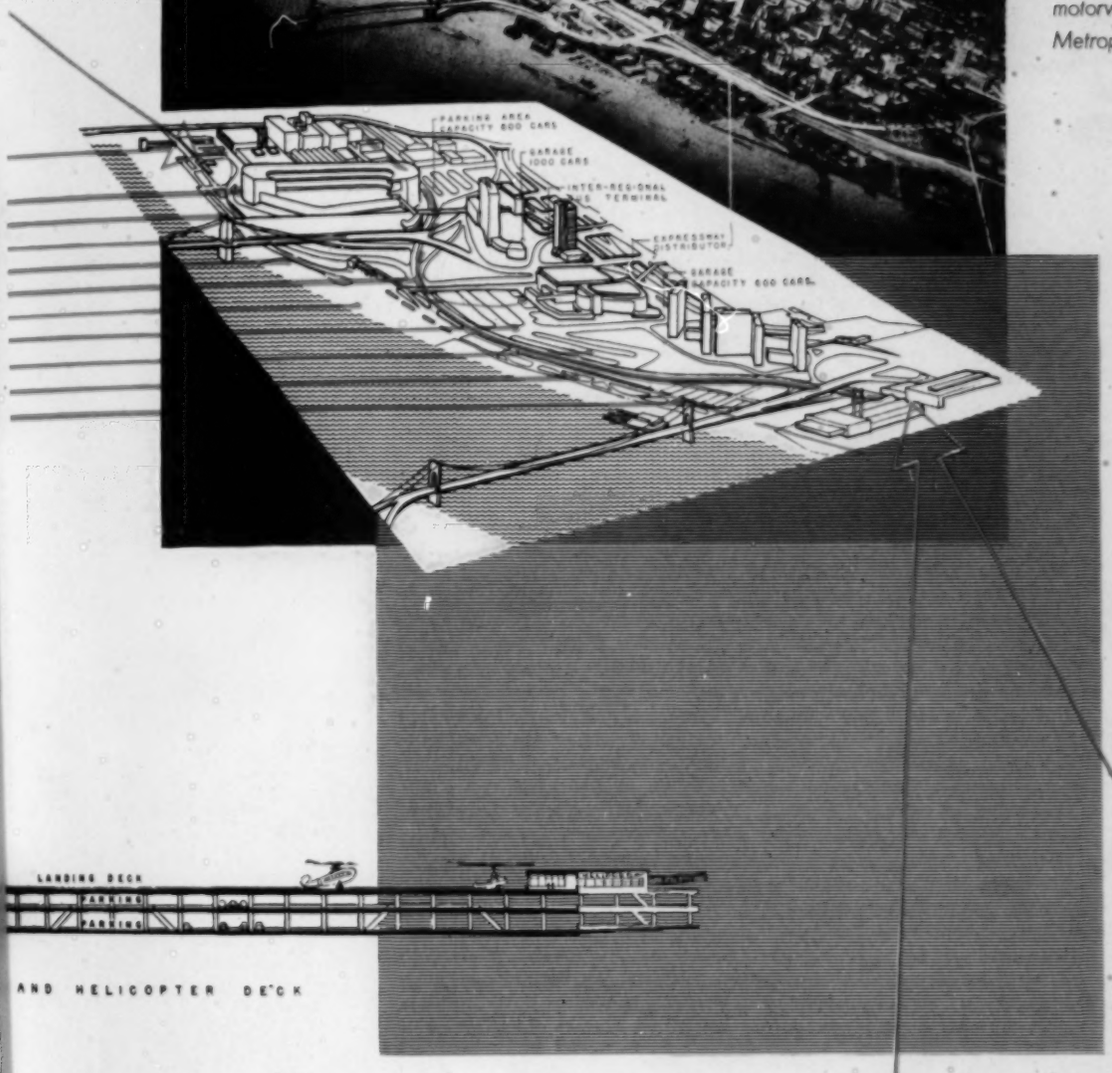
PARKING STRUCTURE AND



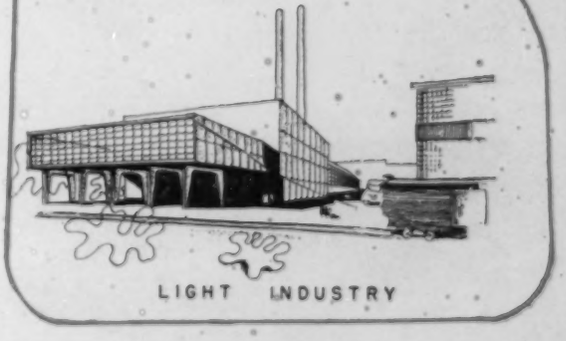
INTER-REGIONAL
BUS TERMINAL



The expressway system, as proposed in the Master Plan and as part of the state and national network of inter-regional highways, makes this the main junction and interchange point for motorways within the Cincinnati Metropolitan Area



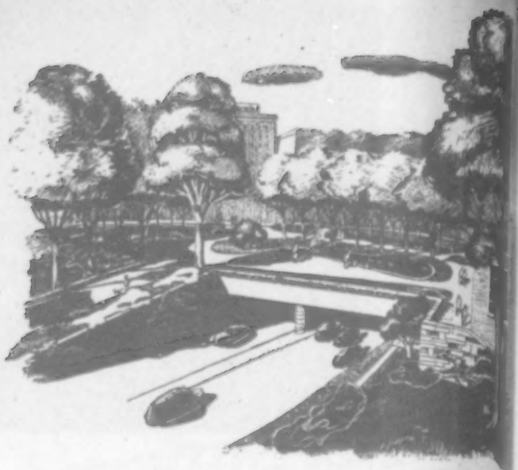
AND HELICOPTER DECK



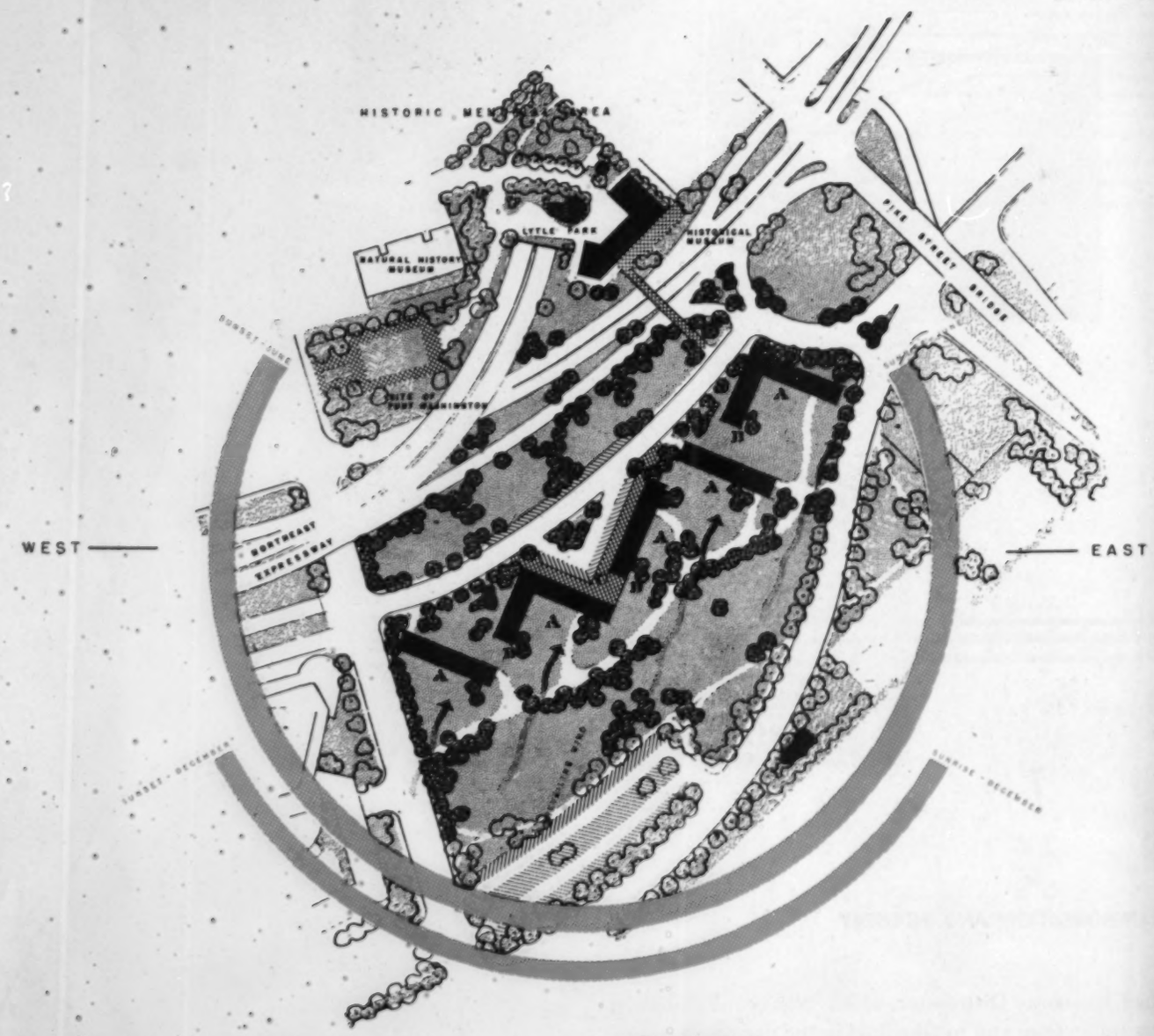
TRANSPORTATION AND INDUSTRY

The Expressway Distributor, which collects and distributes traffic from and to all points in the downtown area and across the river, and its expressway and highway connections, naturally form the backbone of the riverfront design. Vehicular traffic serving units included in the redevelopment plan flows around each group and is separated from pedestrian circulation within and between the several component parts.

Large areas and structures for parking approximately 9,000 cars are located for maximum utility not only in relation to units contained in the plan but for serving the urgent needs of the adjacent business district.

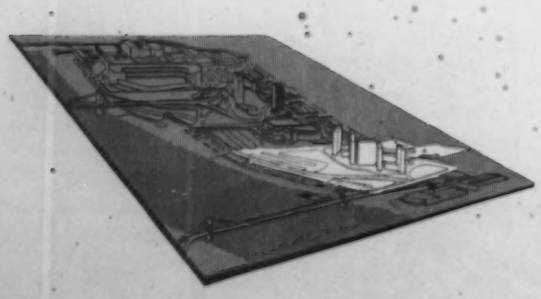


LYTLE PARK

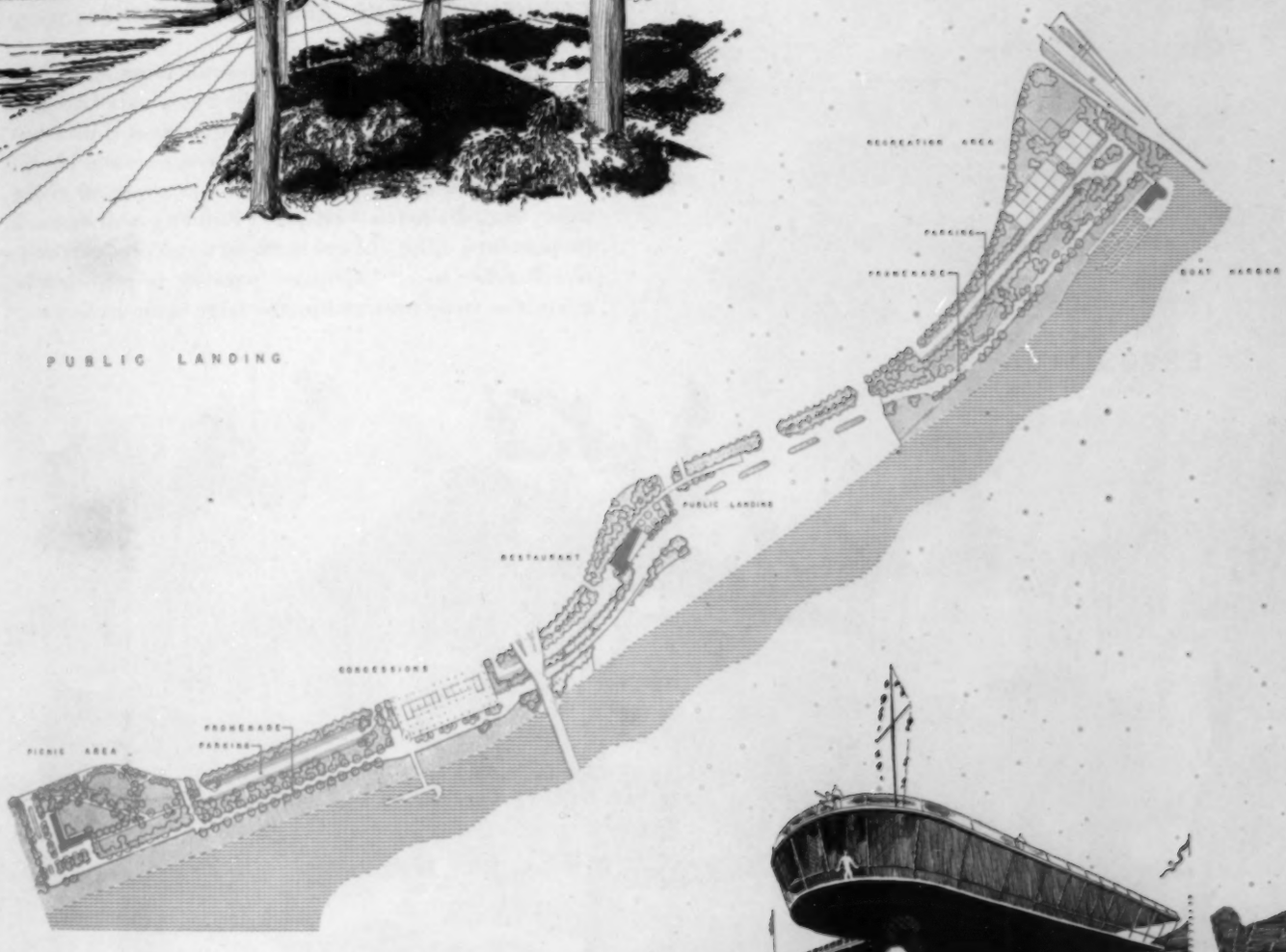


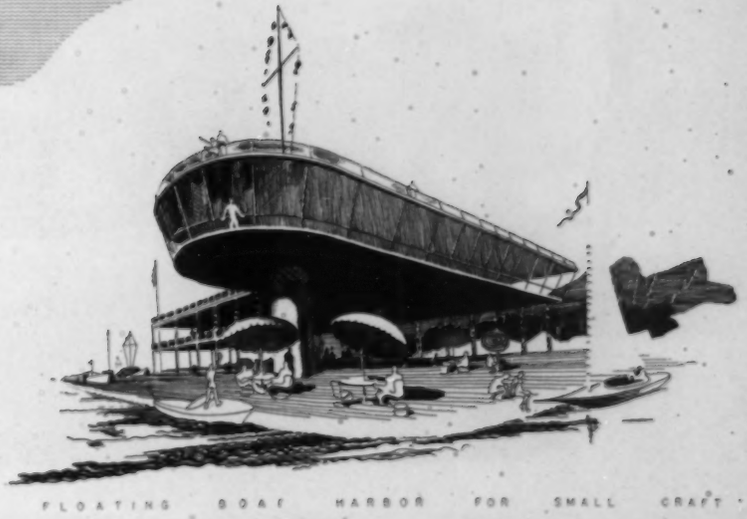
APARTMENTS

The redevelopment plan shows a number of apartments so grouped as to secure the maximum advantages of sunlight, prevailing breezes, and river view. These would be an extension of the existing apartment development around Lytle Park, connected with it by the expanded park development and museums areas.



The banks of the Ohio will again become a haven for recreation and relaxation with facilities for boating, picnicking, driving, family games, or just strolling or taking one's ease, enjoying the cooling breezes

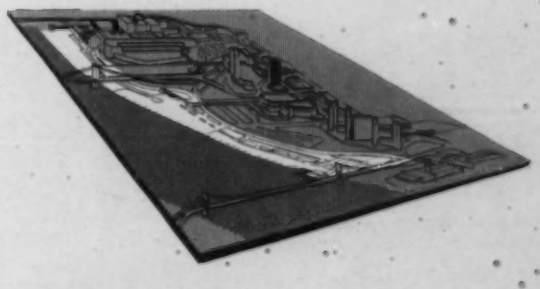


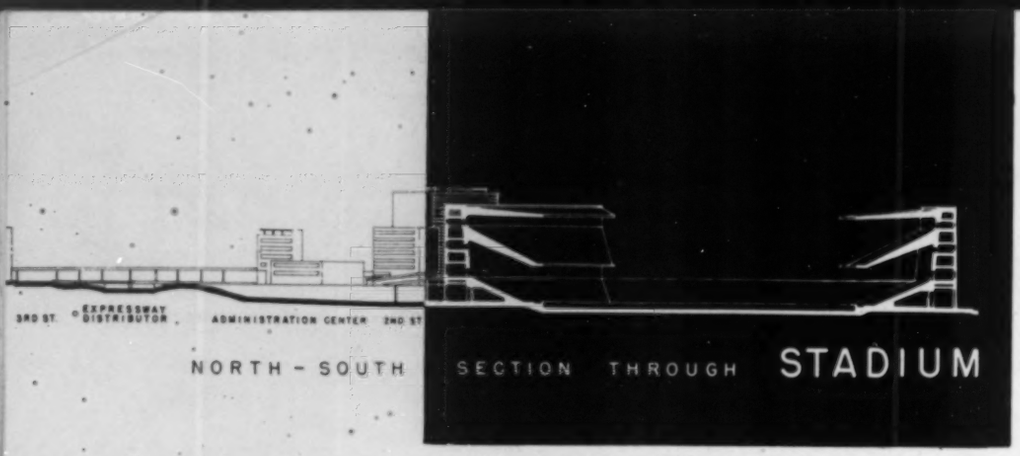


FLOATING BOAT HARBOR FOR SMALL CRAFT

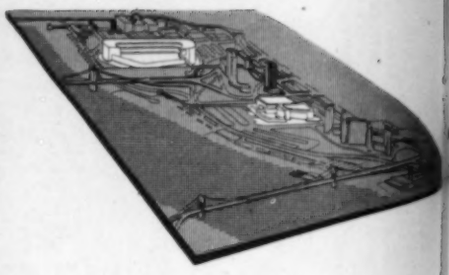
RIVERFRONT RECREATION

Provision is made for active and passive forms of recreation and those directly associated with the water. The open expanse of the river's surface becomes an integral part of the scene esthetically, and for practical use. A portion of the bank is developed as a park with a promenade and pedestrian paths.





NORTH - SOUTH SECTION THROUGH STADIUM

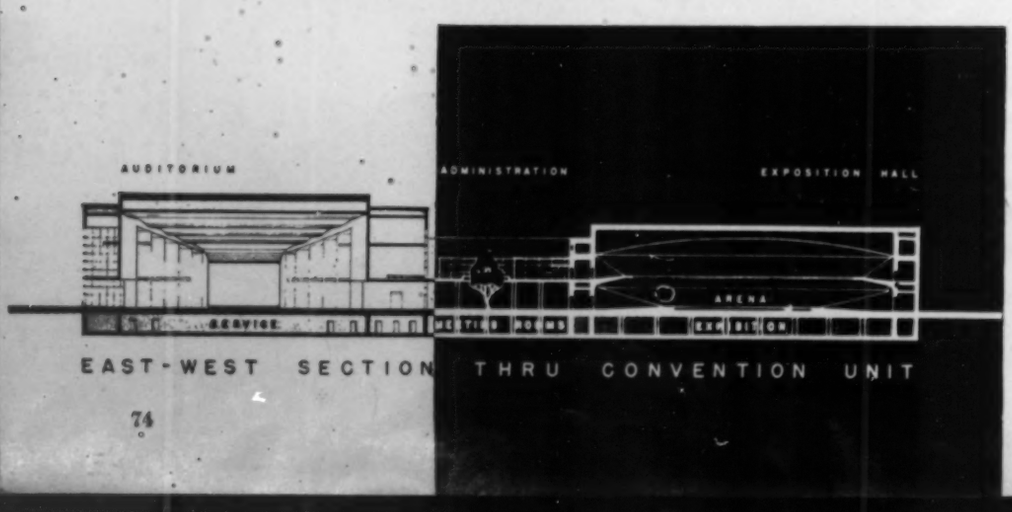


EXPOSITION HALL

CONVENTION AND RECREATION UNITS

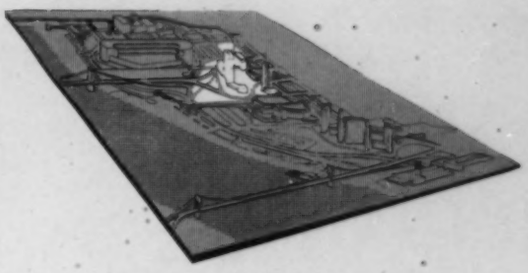
A long-anticipated Civic Auditorium, impressively set, might well become the home of the Symphony Orchestra and the Summer Opera. The Exposition Hall-Arena, with the Auditorium, will serve conventions and provide for sports, ice shows, and many other types of gatherings. The Industrial Display Building will house a permanent exhibit of local manufactured products and a merchandise mart. Adequate parking is provided beneath the structures and in the large open areas.

AUDITORIUM



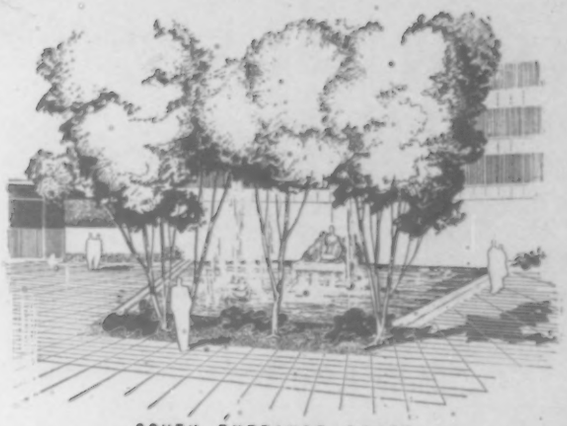
EAST-WEST SECTION THRU CONVENTION UNIT

MUNICIPAL BUILDING FROM ENTRANCE COURT PLAZA AT THE FOOT OF WALNUT STREET LOOKING SOUTH

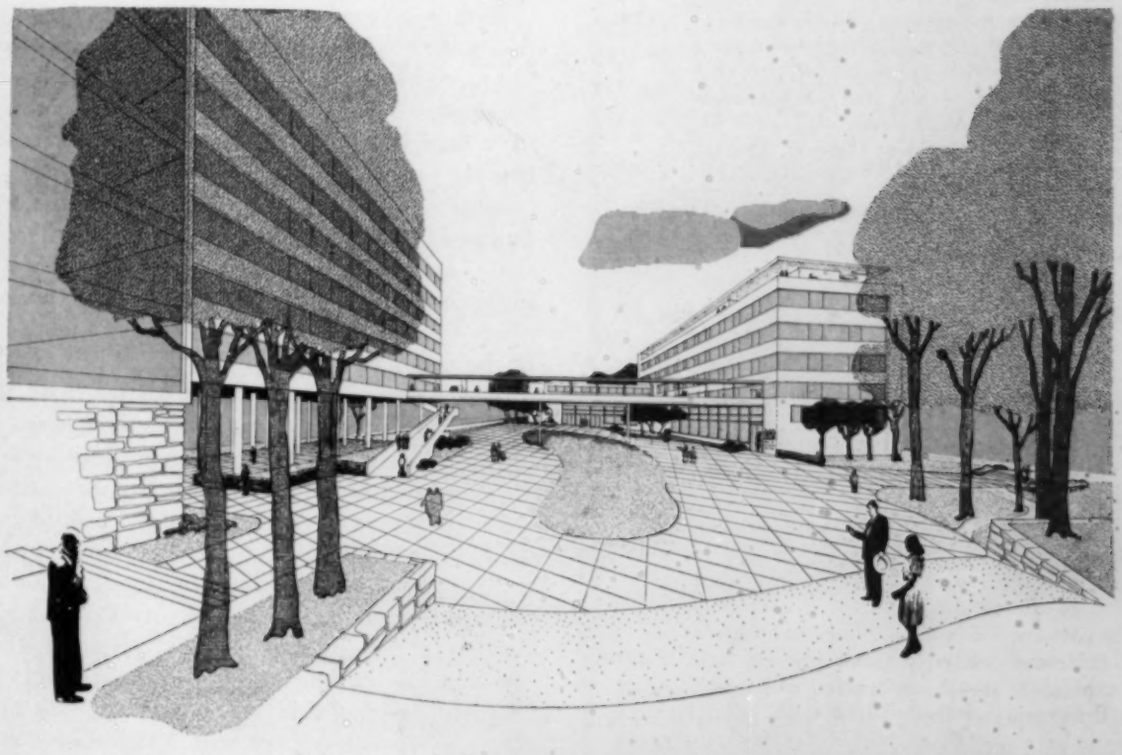


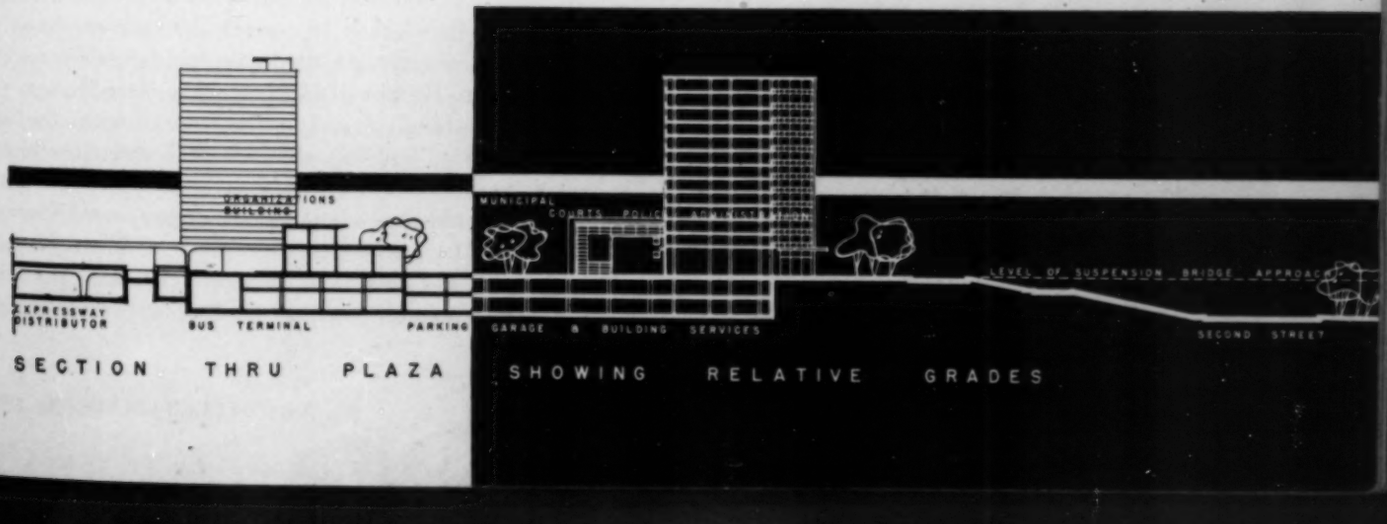
ADMINISTRATION CENTER

This plan visualizes a modern concept of a convenient, efficient and impressive center for governmental activities. The administration center requires central location and considerable land. Nowhere in the city can these requirements be met as economically and adequately as on the riverfront. Here the component structures are given spacious and dignified settings, convenient to transportation facilities and to the downtown business and commercial sections.



SOUTH ENTRANCE COURT
ADMINISTRATION BUILDING





SECTION THRU PLAZA SHOWING RELATIVE GRADES

RENTAL HOUSING

Private enterprise needs, not a new "program," but merely a favorable climate for investment

By Emerson Goble

> The main point of emphasis for 1947 is rental housing. Within the total number of homes to be built, it is of major importance that a maximum number of rental units be provided. We are planning financing and other aids that will encourage builders to produce units for rent.
>
> — President Harry S. Truman

All remaining wartime and emergency regulations on construction, including rent controls on new building (but not on existing buildings), priorities, subsidies, allocations, and market guarantees, should be removed immediately. Only the establishment of a free market will enable the construction industry, through free competition, to restore a smooth and balanced flow of building materials and equipment, stabilize prices, and thus eliminate the wasteful delays and abnormal costs of present operations.

The removal of the remaining controls is a necessary prerequisite to the establishment of a definite price level in the construction industry. The establishment of such a definite and relatively stable price level is, in turn, a prerequisite to the resumption of normal appraisal and financing methods which must take place before we can have more than a trickle of rental housing.

— The American Institute of Architects

> Our big push for 1947 will be rental housing. It is clear that what the veterans need most are rental units. More of these must be built. In cooperation with financial institutions and industry, we are continuing to seek other aids that will encourage builders to produce more rental housing. Veterans have a 30-day preference to rent such housing.
>
> — Housing Expediter Frank R. Creedon

RENTAL housing is the accepted objective for 1947. The problem now is how to induce private enterprise to undertake rental projects.

Already a year has been lost — that is, a year since the country had a formal program for veterans' housing. For much longer than that the country's need for rental housing has been obvious. And worse yet, there seems to have been little progress toward an understanding of how the rental units are to be provided.

Despite all the current protestations of the need and promises of incentives to builders, there is still no visible sign of an understanding of the problem. Official Washington has been partially cleansed of its weakness for heady controls, has promised to taper off, then swear off for good. But the really healthful regimen has not yet been prescribed. As this is written, with the new Congress settling down to business, the housing patient is waiting its turn in the economic-legislative clinic. Its many well-wishers are offering advice — much of it good, but much of it still showing a lack of complete diagnosis.

So ARCHITECTURAL RECORD here undertakes the diagnosis and prescription. It does so with full realization that rental housing suffers from a deep-seated malady, one that has continued over many years, and one that may still require study of a laboratory nature. The RECORD began last May with "The Case for Rental Housing." This was in the nature of a statement of the problem, offered then to correct the over-emphasis in the Wyatt program on the individual house for sale to the veteran. By now it is abundantly clear that it was wrong to attempt to saddle the veteran with the high costs of house building, that a rental unit gives him a much better deal in a high-cost period. In September the NHA published a booklet also urging rental housing, and the FHA has one on planning now in process (see pages 111, 117 and 119). President Truman has said, "The main point of emphasis for 1947 is rental housing."

Beacon Apartments, for Savings Banks Trust Co., Harrison, Ballard & Allen, Architects

Prescription for Rental Housing

It is not too early to offer certain suggestions for creating a favorable economic climate for investment in dwelling units for rent. Among those given below are included the suggestions of Miles L. Colean, well known housing consultant and former Assistant Administrator of FHA (see his article on page 81).

Suggestions for stimulating rental housing:

1. Remove all rent ceilings from newly constructed rental units.

2. Remove all government cost restrictions on new rental units.

3. Adjust rent ceilings on existing dwellings.

4. Remove or modify the federal corporate income tax on rental housing corporations.

5. Remove all restrictions on the building of single-family houses.

6. Remove restrictions on non-residential building, to permit better balance in the manufacturing and construction industries.

7. Through new state legislation, enable insurance companies to undertake equity ownership in states not now permitting it.

These suggested incentives are not regarded as comprising a "program." They spring rather from a conviction that private capital requires, not a *program* of new baits in the form of financing, guaranteed markets or assured yields, but simply a *favorable climate* for investment. While they ask for the removal of some obvious current deterrents to investment, they also seek to overcome some discouraging factors that existed prior to today's troubles with controls and high costs.

The fact is that before the war rental housing was not produced in any volume. Then there were the financing inducements of Section 207 of the housing act; costs were moderate, labor and materials were in abundant supply. Yet large-scale rental investment did not seem attractive. Mr. Colean's article analyzes rental housing investment over the long term, pointing out some obstacles that need removal if capital is to be attracted.

On the Positive Side

Such an analysis turns up some positives as well as some negatives. If the "programs" did not work in prewar years, and the revised housing programs did not work too well during the war, at least some factors are more favorable today. A big factor is today's demand, and demand is always the biggest single inducement to investment. And today's rents would be high, were it not for rent ceilings.

The possible rents must be relatively high to induce investment in this period of high costs. As a matter of fact, however, history shows that most building has been done when costs were high. The reason is that rents also were high. When there is a shortage of space, tenants bid up rents to high levels and it becomes profitable to build, even if costs are high. In short, in the familiar cycle, rents go up, values of existing buildings follow, until it becomes cheaper to build new than to buy old.

Under rent controls this cycle has not been possible. That is the reason, of course, for the plea by some real estate men that all controls be abandoned at once. There would be a quick inflation of rents until it became profitable to build, then a rapidly increasing supply of space would bring rents down again — the same thing that happened last fall with meat.

What about the Speculator?

One of the troubles with rental housing has always been its parentage. It had long been known that most of the housing originally planned for rental was built on

> Without prompt action by the new Congress to aid the speedy construction of moderate and low-rent housing, the new Veterans Emergency Housing Program will fall short as did its predecessor in making homes available for the mass of veterans.
> — National Committee on Housing, Inc.

speculation, built to sell to an investor. There has always seemed to be more profit in promoting, organizing and constructing buildings than in owning them through the years. And it is frequently said today that the missing link is the speculative builder, or operator, who cannot in this market see his quick profit. Some would urge more attention to measures that would encourage him.

The list of suggestions numbered above was not drawn up with the operator in mind, though undoubtedly many of them would serve him as well as the investor. The fact that he was not heavily considered is not to be taken as implying condemnation of the speculative type of parentage of rental units; it merely means that it is the children's health that is of more immediate concern, without regard for their lineage. For, sooner or later, all rental buildings must settle into investment ownership, and this ownership must be made more attractive.

There have always been some builders-for-investment. Certainly there is plenty of investment capital potentially available today. One student of housing matters points especially to the possibility of organizing local capital to undertake rental projects. A local industry, with a problem of housing its workers, might be a strong initiative force, and local merchants and banks and builders might get together an investing group. Such a group should represent an ideal type of investor.

The suggestions above, then, are pointed toward investment building.

1. Remove Rent Ceilings

The removal of rent ceilings on new construction seems so obvious a step that one wonders why it isn't done immediately. Perhaps it could not have been done last fall when OPA was still fighting for control theories, but in the present atmosphere it is amazing that this particular control is still left for inclusion in this article.

It seems apparent that the *sine qua non* for enterprise is a chance to make a profit. What other inducement could possibly have any effect without this one? Suppose a builder does rush in with a project and demand outrageous rents? He won't have them for long, for competition is sure to follow, and competition is sure to make inroads in his lush profits. And that, of course, is the very cycle the whole country is trying to get started.

Who could get hurt in that cycle? Only the investor himself could suffer any lasting damage, for his high costs might still remain to be paid off after the high rents had fallen off. The early tenants, of course, would pay high rents — for a while. Presumably, however, early tenants would be those able to pay, and would include few veterans.

Now politically it might not sound wise to seem to be building for a moneyed group instead of for veterans, but the veteran profits rather than loses by that process. For the faster new apartments are built for fancy rentals, the faster something cheaper is made available to him. The wealthier tenant then stands the high building cost, while the apartment the veteran gets is still under rent control.

Spokesmen for veterans' organizations are not ready to settle for this "trickle-down" theory. They all agree, however, that the average veteran cannot pay rentals that seem necessary to make investment attractive. It seems only common-sense realism to use, then, the only method that ever has produced a volume of housing for the middle-class income groups — the filter-down method. Indeed it is clear that that is exactly what the typical veteran does want; he does not want to buy or build his own house. While he would want as much luxury as he could get, of course, he wants primarily a good livable apartment that he can afford. And he wants it in a hurry.

The factor of time is important. No public housing program could be big enough or fast enough for the present emergency.

2. Remove Cost Restrictions for New Rental Units

The same arguments apply to the removal of cost restrictions, but here there are further reasons.

An apartment building is necessarily a long-term investment. It is built to stand for 25 or 50 years (35 years is supposed to be average economic life). The builder must anticipate competition far ahead. Force him to build a low-cost, sub-standard building, and you damage his chances to withstand competition of newer, finer, better-equipped structures sure to come some day. Much as he would like to keep his costs down, he must build something good enough for survival in its own competition. There is a perfectly natural urge, therefore, to build ahead of today's standards, rather than behind.

On the other hand, some say today that cost limitations are already high enough to be above the market, except in large cities, and thus that cost restrictions are not a factor in most of the country. It would seem, then, that they should be removed — where they are a factor they are restrictive; where they are not a factor they serve no purpose.

3. Adjust Rents on Existing Buildings

This suggestion is the one that runs into the most widespread objection, the one most snarled in political hesitation. It is also the one least understood.

Mr. Colean mentions the effect of existing rent ceilings in forcing a shift from rental to sales. This has seriously depleted the supply of small buildings available for rent.

Existing ceilings also have resulted in some "hoarding" of rental space. An unmarried person, for example,

continues to keep a four-room apartment for himself, largely because under rent ceilings he can afford it. Higher rents would force him to share it with a companion, and free some other rental unit.

Moreover, as long as ceilings make rental investment look unattractive they operate as a brake on new construction. It is tempting, politically, to take from the "wealthy landlord" and give to the poor tenant, but the result is an inevitable housing shortage. In France after the first world war such pressure on landlords kept new building at a virtual stand-still for two decades.

Mr. Colean's statistics show that apartment ownership has proved anything but a lush field for investment. On top of the natural hazards and burdens of competition, obsolescence, local taxes, corporate income taxes, thin equities, we have now added rent controls, to block off any chance to make up for thin depression years.

It would seem that the least to be done now would be to give some positive assurance that the apartment investor was to be allowed to make a profit. He needs some assurance too that rent controls are not to be a permanent hazard.

4. Remove or Modify the Federal Corporate Income Tax

Colean mentions briefly the handicap to the large apartment investment inherent in the corporate federal income tax. It places the corporation at a disadvantage in relation to the individual owner of a small rental property, and seriously cuts into its revenue. In a more detailed study of this one deterrent to investment * he makes these points:

"1. The corporate income tax almost completely blocks true investment in rental housing by realty corporations, greatly increases the long-term hazard of the investment, and limits the benefits to a relatively small high-income group of renters.

"2. The tax is, in relation to the total capital involved, a poor producer of revenue (bringing in an average of only $30.5 million a year from all types of urban realty corporations during the period 1938–1942) and therefore could be eliminated. The loss of that part of the tax derived from rental housing would not materially lessen the federal revenue and would relieve a disadvantage to investment in an already heavily taxed form of enterprise.

"3. Short of this step, corporations that own rental property might be allowed to consider themselves as partnerships for tax purposes. In addition, because of variability in rental income, the corporations should be permitted to carry over loss deductions for at least a five-year period."

5. Remove all Restrictions on the Building of Single-family Houses

It has frequently been pointed out that the best way to provide housing for veterans is simply to increase the supply of housing for everybody. That anybody willing and able to build a dwelling unit of any kind should be encouraged to do so.

> Price and rental ceilings on new construction have proved unrealistic and ineffective and have checked the construction of greatly needed multi-family housing. Therefore such ceilings should be lifted.
> — National Committee on Housing, Inc.

The most forthright comments on these restrictions have come from Herbert U. Nelson, executive vice-president of the National Association of Real Estate Boards:

"Removal of ceilings on sales prices of housing, as announced, is a good thing. It will help increase the total housing supply which is the only answer for the veteran or anyone else.

"Removal of the impossible priority system for builders and individuals is also a good thing. This never functioned anyway and merely bogged down the industry.

"Retention of rental ceilings on new houses is a bad thing. The greatest investment opportunity for building rental housing is not in any given level of rentals. It lies in the whole rental market at all levels. Therefore, all rental ceilings should have been removed. As long as rental ceilings remain at all, the paralyzing hand of the bureaucrats will be felt in every rental housing project . . .

"Allocation of materials is to remain. That is a mistake. The flow of materials in November was record-breaking. Materials of all kinds are piling up all over the country. In another two months there will be plenty for every kind of construction. The allocation system should have been abandoned.

"Worst of all is the retention of a federal permit system to apply to every house that is to be built and every other kind of building. This is something that the federal government just cannot handle . . . This cannot possibly do any good and will continue to slow up and bog down the whole housing program."

6. Remove Restrictions on Non-residential Building

The President's December statement included this about materials: "The production of critical building materials will require the continued allocation of a few raw materials during the first quarter of 1947. If present high levels of production are maintained it should be possible to discontinue raw-material allocation at that time."

For months now production of building materials has been at an all-time peak rate, and shortages are rapidly disappearing as a factor in building troubles. The President's removal of price ceilings on materials should remove any uncertainty about supplies sufficient for a great volume of building in 1947.

As a matter of fact, restrictions on non-residential

* EFFECT OF THE CORPORATE INCOME TAX ON INVESTMENT IN RENTAL HOUSING, by Randolph Paul and Miles L. Colean, published by National Committee on Housing, Inc.

RENTAL HOUSING NEEDS ARCHITECTS' INITIATIVE

By Raymond M. Foley

Commissioner, Federal Housing Administration

THE primary objective of FHA for 1947 is to stimulate the production of rental housing for veterans.

While we are still considering further steps to take, I believe that right at the present moment anyone with a comparatively small amount of working capital and a large amount of initiative and energy could hardly find a better opportunity than that offered by the rental housing program of the Federal Housing Administration.

Finding a sponsor probably would be the chief problem of an architect who has planned a project of his own and has located a suitable site.

Actually, several architects have become their own sponsors. They purchased the site, worked out preliminary plans, obtained the approval and cooperation of FHA, found lending institutions to provide long-term and short-term financing, let the contracts and supervised construction, and became owners and operators of successful rental projects. And these projects were financed and built under the more restrictive provisions of Section 207, Title II, of the National Housing Act.

It is easier to "become a sponsor" of a housing project under Section 608, Title VI than it was under Section 207, or than it will be again under that section when the emergency is past.

Under the revived Section 608, the mortgage may be for up to 90 per cent of what FHA estimates to be *necessary current cost* of the completed property, including land, but also *including* utilities within the boundaries of the property; architects' fees; taxes and interest accruing during construction; and other miscellaneous charges incidental to construction and approved by the Commissioner. The mortgage amount per room may be as much as $1500, which may be increased to $1800 where in the Commissioner's discretion cost levels so require.

Any architect knows that 90 per cent of the "necessary current cost" of a completed project, including land, is liberal first-mortgage financing. There are lending institutions all over the country willing to extend this long-term FHA-insured financing to responsible sponsors. Also, short-term financing is available in any metropolitan area, as FHA has worked out a system of insuring advances as construction progresses. The mortgagee institution sometimes handles the short-term financing as well. Often a local correspondent of the mortgagee advances the construction money.

Whichever way it is done, FHA-insured financing for acceptable projects is available to responsible persons or groups of persons sponsoring the projects.

As I have indicated, the sponsor is the key figure. It is he who has to start the project going, see it through to completion, and then operate it. He must have some operating capital. And he must have initiative enough to find a suitable plot for a housing project. From that point on, he has the active aid and cooperation of FHA — even to the management of the project after completion.

building are themselves a handicap to building materials manufacturers. In many items they tend to restrict supply and increase costs. Permitting unrestricted building of all types of construction would actually stimulate the flow of materials, rather than the reverse.

In lumber cutting, for example, it is uneconomical to produce nothing but small sizes. There is a most economical way to cut a log, usually involving cutting some heavy timbers and some small sizes of lumber. Force a sawmill to stack up unsold timber sizes, or do excessive sawing to get residential sizes, and a strain has been introduced in its operation.

There are similar strains throughout the manufacturing industries when normal markets and normal operations are twisted artificially. The greatest production is possible only when industry is free to use its facilities most efficiently and effectively.

7. Enable Insurance Companies to Build in New States

Some nine states now permit domestic insurance companies to make equity investments in housing projects, and perhaps a dozen more permit out-of-state companies to do what they are allowed to do in their own states. But in many states it is illegal for them to build and own housing developments; local interests do not seem to care for that competition.

Insurance companies, however, are the largest and most likely source of funds for the housing most needed now. As Colean points out, they have funds seeking investment; they cannot keep those funds idle. And they can survive on a comparatively small return, and can weather a period of thin rental markets.

Some of the states not now permitting this type of investment are those with serious housing problems — Michigan, Pennsylvania, Louisiana. If local investors are not attracted to rental housing it would seem desirable to attract all possible capital from inside or outside of the state.

Programs vs. Profits

Housing today does not need programs. It merely needs what every other business always needs — a favorable background or climate for the kind of investment required.

After the failure of the Wyatt program, many others are currently being offered to take its place. President Truman's action after Wyatt's resignation leaves housing in a no-man's land between two divergent economic philosophies. Naturally interested organizations are offering various programs for the further action that is so plainly going to come.

Included in the many suggestions are many that are good. So far, however there does not seem to be sufficient realization of the basic fact that rental housing through the years has not proved very profitable.

So out of all the current incentives the RECORD has selected those above as being the ones most likely to improve the earning capacity of rental units. Only thus can new capital be attracted.

Sedgwick Village, Bronx, New York, for Savings Banks Trust Co.
Skidmore, Owings & Merrill, Architects

THE RENTAL HOUSING MYSTERY

By Miles L. Colean, Housing Consultant

WHY isn't more housing built for rent? What can we do to get more rental housing built? These questions have haunted government officials, and private enterprisers as well, since the days of the Great Depression.

The 80 per cent FHA insured rental housing mortgage was invented to solve the problem. It didn't solve it. It never made up more than a small fraction of FHA prewar business. With the coming of the war, a 90 per cent insured rental housing mortgage was provided for. Added to this inducement was the effort of the federal government to require that dwellings be built for rent. Yet of the total FHA wartime operation, probably not more than a quarter represented housing units occupied in the first instance by tenants.

The mortgage interest rate has declined from the 6 and 7 per cent "gold bond" rate of the late 'Twenties (plus commissions, discounts, etc.) to a 4 and 4½ per cent rate (including a mortgage insurance premium); and still the results in additional rental housing are disappointing. Amortization periods have been stretched to 25 years and longer; and again the incentive remains inadequate.

What is the matter?

Wanted: A Favorable Investment Environment

The natural tendency of a free economy is to produce the goods for which there is an evident demand, unless artificial obstacles are placed in the way. This is no less true of rental housing than it is of automobiles or radios. The difference is that with the latter we have endeavored to create — or at least not to interfere with — an environment favorable for their production, while with rental housing we have acted almost as if we did not wish it to exist.

The rental housing supply is made up of three general classes of structures: single-family houses; small structures accommodating only a few families; and larger apartment buildings. Each class is important in making up the whole range of the country's rental requirements. Each depends upon the presence of definite, but differing, incentives. Each has faced obstacles that seem designed especially for it.

The part of the rental market made up of single-family houses (about 40 per cent of the 1940 non-farm rental supply) is mainly derived from houses that were originally owner-occupied. Except in time of depression, these houses most frequently get into the rental market by being retained for income or a rise in value when their owners move to newer or more suitable quarters. This type of rental housing is the most immune from ordinary investment considerations, such as a close figuring of return and a keen sense of alternative investment possibilities. Yet under our control program we have done two things to prevent rental housing of this class from being expanded. First, we have prevented the very people who might contribute in this way to the rental supply from building new houses. Second, we have, through the disparity between frozen rents and unrestricted sales prices, removed all incentive to hold existing housing in the rental market. The result is that during the last five years we have actually, by the sale of older houses, reduced the total rental supply around 20 per cent.

The second class of rental dwellings — double houses and other small structures — in the past have frequently been erected by persons who may occupy one unit themselves and derive an income from lease of the others. Restriction on non-veteran building up till recently has prevented this type of investment from taking place, while, even if it had been permitted, the limitation on rent, together with the difficulties of the small operator in face of the complex control machine, would probably have destroyed the incentive.

While the environment has been unfavorable to the expansion of these classes of rental housing, it has been even more discouraging to investment in large rental housing properties. Such investment is quite a different thing from what we have been discussing. Here the prospect of return will be more carefully measured against that from alternative investments, and risks will be more knowingly calculated.

It is essential to look at some of the problems of this larger type of investment in order to understand what is required to create a favorable environment for it. In the first place, the large investment is in competition with the two numerous groups of small rental properties. This competition has a peculiar and unhappy way of increasing when the market is weakened. During the depression, for instance, probably over 2,500,000 single-family houses were transferred from owner-occupancy

Rental housing is certainly one of the most vital and important issues confronting the veteran. An overwhelming majority of veterans prefer to rent housing units rather than to purchase. Supply of rental housing for all income groups is seriously short.

Large corporate investors have found it unprofitable to build under present economic conditions. Many small owners of investment properties have found it more profitable to sell at inflated prices rather than continue to rent under restrictive government controls. Some small investors have found ownership of small investment properties without profit. Other landlords have had excellent return on initial investments in spite of controls. Many owners have converted rental housing to office, commercial, industrial and other non-residential uses, because it was more profitable.

It was generally agreed by all representatives of government and private groups who appeared before the committee that additional incentives and authorizations must be provided to developers of rental housing. Many state laws, county, and city ordinances obstruct investors from developing rental housing.

— American Legion Housing Report

All remaining wartime and emergency regulations on construction, including rent controls on new building, priorities, subsidies, and market guarantees, should be removed immediately. Only the establishment of a free market will enable the construction industry, through free competition, to restore the smooth and balanced flow of building materials and equipment, stabilize prices, and thus eliminate the wasteful delays and abnormal costs of present operations.

— H. E. Foreman
Associated General Contractors of America

I think of tremendous importance to this Committee is the fact that the drain on building materials of non-residential construction is considered a major factor in *only 25 per cent* of the reporting cities.

— Calvin K. Snyder
National Association of Real Estate Boards

to the rental market (about five times the number of new rental units in two-family and multi-family structures built during the period.[1] This shiftability of tenure is apt to give rentals an artificially rosy aspect in good times and to knock the props from under the market in a depression. Only the strongest kind of investor can survive against this source of competition.

Yet the strong investor finds a number of things that make him less than eager to enter the field. To begin with, he will usually find it advisable to use the corporate form of ownership, while the bulk of the rental supply is in personal ownership. The resulting tax on corporate income constitutes an additional load that he must carry. Moreover, the tax makes it extremely hard to maintain reserves against inevitable variations in income.

There are still other problems that confront a large investor. He must take the property tax into account to an extent that would not be true of almost any other type of investment that he might make. This tax will take a toll of as much as 25 per cent or more of his gross earnings; and it will be a fixed charge unrelated to the variability of his earnings. Ordinarily a portion of the housing investment will have to be covered with a loan; and the payments on the loan will be another fixed charge, as rigidly constant as his income is likely to be fluctuating. The greater the amount he must borrow, the higher the fixed charges will be in relation to total income and the more vulnerable the investment will become when a slump in demand occurs. And this risk is much increased if the investment is made in such a plainly high cost period as the present.

Rental housing, moreover, not only requires a high degree of specialized managerial skill, but also involves high management costs. These expenses can be reduced but slightly to meet a depressed market, and they tend steadily to rise as the property grows older and income declines. Location offers another risk unique to this type of enterprise. A mercantile establishment, for instance, may move if its original choice of location was in error, or if in the course of time the character of the location changes for the worse. With housing, however, the choice, bad or good, originally or later, once made is irretrievable. Moving is impossible and liquidation may be difficult and costly.

The investor will not find that these several hazards are mitigated by the prospect of a relatively high yield. On the contrary, he may expect to earn less than he would anticipate from almost any other form of business enterprise. For the years 1938 through 1942, for example, Treasury statistics show that, of all types of corporations, real estate corporations had the lowest rate of return, in reference both to total invested capital and to equity capital.[2] In the relatively poor year of 1938, manufacturing corporations with net income earned around twice as much (either in reference to total in-

[1] Miles L. Colean: AMERICAN HOUSING, PROBLEMS AND PROSPECTS. Twentieth Century Fund, 1944, p. 231.

[2] Figures for housing corporations, as separate from other realty corporations are not available, but there is no reason to believe that they did better than the remainder of the group. Statements are based on U. S. Treasury Statistics of Income for the years given.

Certainly, with the bulge in rent ceilings on new construction, more rental units will be built during 1947. However, the vast majority of veterans will benefit only through the trickle-down system in which vacancies created by non-veterans moving into the new higher-rent developments may become available to veterans.

The average veteran finds himself on a lower rung of the economic ladder and is unable to pay more than $50 a month for his shelter. I see nothing in the new program that will provide rental units within this price range. If the veteran is to be served by this new housing program, or any housing program, multiple housing projects must be built to meet the lower-income group needs. In our opinion, the only possible way to build in this bracket would be through a subsidy in one form or another. We of the V.F.W. believe in the free enterprise system and dislike the word "subsidy" as much as anyone else; but we do contend that during the present housing crisis, emergency methods must be used if the veterans of the nation are to be provided the homes promised them and which, we believe, is their just right.

— W. D. Pearce
Veterans of Foreign Wars of the U. S.

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vestment, or equity investment) as realty corporations with net income. In 1942, the gap was over four times the earnings of realty corporations. The comparison with mercantile corporations is almost as disparate. Public utility corporations during the same period did from 25 per cent to 40 per cent better than realty corporations. If the comparisons are made in respect to all corporations, whether having net income or not, the differences are even more striking.

The picture is not alluring. A favorable environment for rental housing investment very obviously has not been created. The result has been a reluctance of venture capital to enter the housing field, except where a quick capital gain was in prospect.

Futility of the Federal Mortgage Insurance Program

In facing the need for additions and improvements in the supply of rental housing, the federal government has observed that venture capital was not clamoring for this kind of investment. It has, however, never indicated any recognition of the underlying causes of the dearth of equity funds; and it certainly has not taken any steps to remove them.

Quite the contrary. Instead of taking steps to make equity investment more attractive, it has followed the self-defeating course of trying to make it unnecessary. This is the essence of the policy that has sought to substitute mortgage funds for equity funds by using the FHA device to secure a high loan-to-value ratio.

On the face of it, the high ratio rental housing mortgage seems to have advantages. It would appear to make the presumably small amount of available equity capital go further to produce a supply of rental housing. By taking a considerable part of the income in form of interest (a deductible tax item), it reduces the impact of the corporate income tax in respect to the total investment. Finally, by continually exerting pressure on the mortgate interest rate, the policy tends to increase the residual return going to a small equity.

These supposed benefits, however, are for the most part illusory. The tax advantage is soon nullified by the mounting amortization payments, which are not deductible and which, under the customary constant figure for the sum of interest and amortization, rapidly outdistance the deductible depreciation allowance.[3] The government's attempt to meet this difficulty by increasing the depreciation allowance only adds to the vulnerability of the investment in its later years.

Moreover, the narrower the margin of equity, the more hazard there is of its extinguishment with any misforecast, or drop, in income. That this is so should be plainly evident from the large percentage of foreclosures of FHA rental housing mortgages during and following the slump of 1938. With such perishable margins, no practicable amount of pressure on the mortgage interest rate would be likely to shift the balance of income to the equity sufficiently either to reward the high risk, or to permit the reduction of the mortgage in the critical early years.

In spite of these conditions — to which must mainly be attributed the failure of the FHA ante-bellum rental program to reach important proportions — the government proceeded further along the same line.[4] The 80 per cent mortgage became 90 per cent, and, that still failing to turn the trick, proposals now are rife to provide 100 per cent mortgage financing, even though, to accomplish this, it may be necessary to sidestep the mortgage insurance device and have outright recourse to government credit.

Yet, if this were to be done, what would be accomplished? Aside from questioning the distinction between 90 and 100 per cent loan, we should simply have achieved a public housing program with whiskers, and the disguise would be too thin to be long tolerated. All advantage of private judgment and initiative would surely be lost as responsibility passed to the government, and an important field of investment would be closed to private funds. This may be the outcome of the rental housing dilemma, if present trends persist, but it is a surrender rather than a solution.

The Fallacy of Yield Insurance

Apparently recognizing this impasse, a different proposal has been advanced. If insurance of mortgages does not serve the purpose, so it is argued, perhaps the guarantee of a yield on an equity investment will. Such a

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[3] See Randolph E. Paul and Miles L. Colean: EFFECT OF THE CORPORATE INCOME TAX ON INVESTMENT IN RENTAL HOUSING. New York, National Committee on Housing, Inc., 1947.

[4] The question may be raised that the success of the program might have been greater if the rental market in the Thirties had been stronger. This may be true, although a stronger market might have removed some of the excessive dependence on mortgage funds, and would undoubtedly have done so if some of the artificial obstacles to equity investment had been eliminated.

plan, commonly referred to as "yield insurance," is embodied in Title V of the controversial Wagner-Ellender-Taft Bill of 1946 and will undoubtedly reappear in similar form in 1947.

Stated very briefly, the plan provides for a guaranteed yield of 2.5 per cent (after allowances for operating costs, local taxes, capital retirement, and yield insurance premium) in return for the agreement on the part of the investor not to take, should the property earn it, more than 3.25 per cent (above the allowances mentioned above), or, under some circumstances, slightly more. The plan is much more complicated than appears from this outline, but it will do for purposes of the discussion.

To the ordinary investor in corporate enterprises, the plan will have little appeal. The guaranteed rate is hardly greater than he can get from long-term government bonds, without the burden of management and other risks attending the scheme, while the maximum permitted yield is less than he might hope to receive from other kinds of venture investment. There has been no attempt to hide this fact. Rather, it is made quite plain that the plan would appeal only to a limited class of investors, mainly life insurance companies and other fiduciary institutions.

Insurance Companies' Yield Prospects

The extent of such an appeal can be easily overestimated. Many life insurance companies have already made, or presently will make, direct investments in rental housing properties. They are in a uniquely favorable position to do this. They feel only a nominal impact from the corporate income tax. They can survive on a somewhat lower rate of return than could be acceptable to the ordinary investor of equity funds; and then are able to balance out variations in income over long periods of time. Moreover, they are under heavy pressure to find outlets for funds.

Consequently, pending only the further modification of state restrictions on insurance company investments,[5] they may be expected to build, own, and operate rental housing on an increasing scale. To this trend, yield insurance does not have much to contribute. Again, the guaranteed yield is lower than the rates on many other investment opportunities open to insurance companies, while the permitted yield, on the basis of the Treasury figures, is less than they might expect to get from their own projects, should they be no better than the average run of rental property.[6]

A lack of realism in the official mind is once more evident. The yield insurance scheme, if adopted, is not likely to achieve much success on its merits; and if it is to be promoted — as thinly veiled implications would suggest — on the basis that the alternatives available to government would be even less palatable, it provides a sorry method of preserving private investment in housing.

[5] *At least nine states have already made such investments legal for domestic life insurance companies.*

[6] *According to the Statistics of Income net return on the total investment of real estate corporations earning net income averaged 4.5 per cent between 1938–1942 inclusive. In 1942 the rate was over 5 per cent.*

The Crux of the Matter

All the government's rental housing programs to date have been ineffective attempts to compensate for underlying difficulties. No effort has been made to seek out and remove the difficulties.

The government has failed to recognize that, under present circumstances, rental housing is a high risk, low yield, illiquid type of investment, that these three in combination offer a strong deterrent to investors, and that the combination is in no small part due to governmental policies.

Local real estate taxes create inordinate risks and cut drastically into income, while federal corporate income taxes will reduce yields to a level satisfactory only for the safest and most liquid types of investment. The high loan-to-value policy is another source of risk; and the attempt to alleviate the risk with a high depreciation rate only creates temporarily a fool's paradise. Moreover, to increase the loan-to-value ratio still further and actively to promote thin equity financing at a time of high building costs, is plainly to court disaster. The pursuance of such a policy can be condoned only on the pleas of ignorance or desperation. It cannot produce rental housing.

The federal policy has lacked emphasis on the promising source of a supply of rental housing to be derived from the building of small structures and the use of existing single-family houses. On the contrary, the policy, until lately adhered to, of limiting the construction of houses to, and of forcing the sale of the new houses upon, the veteran group (the majority of whom has been shown to desire to rent) has tended to impede rather than to accelerate both the erection of semi-owner-occupied structures (two-family dwellings and small apartments) and the transfer of existing houses from ownership to rental status.

What Can Be Done Now?

Since the federal government still largely controls the destiny of building, the first steps toward an expansion of the volume of rental housing must be taken by it. The following suggestions are offered:

1. All restrictions on the building of houses should be removed so that anyone desiring and willing to pay for a new house should be allowed to do so.

2. No limitation should be kept on new rental construction as to either rents or occupancy. In a market such as the present one, building in any rental class will relieve pressure and will make existing apartments and houses available at rents that cannot for the time be matched in new structures.

3. Rents on existing dwellings should be allowed to increase, so as to remove some of the present overwhelming inducement to sell rather than to rent. This move is necessary to halt the present abnormal shift to home ownership.

4. As an incentive to large investors, the federal corporate income tax should be so modified in respect to rental housing corporations that the return therefrom will show

Waverly Apartments, for Savings Banks Trust Co., Harrison, Ballard & Allen, Architects

up less disadvantageously in comparison with other forms of investment.

So far as private rental housing is concerned, it is doubtful that any other federal action is needed, or that it would be effective if provided. At the same time, however, there are additional measures that may profitably be taken by state and local governments. The process of shifting the over-burden of local taxation from real estate is long and complicated, but a start can and should be made, so that at least future policy will be clear. Insurance laws in those states that prohibit direct housing investment by insurance companies and other fiduciary institutions should be amended in the current sessions of the state legislatures.

There are of course still other measures, not discussed in this article, that would aid in putting rental housing investment on a sounder basis. Among them are: the modernization of building codes to avoid excessive cost and facilitate innovation; the modification of licensing laws for contractors and tradesmen where they operate as restraints in trade; the outlawing of restrictive practices within the construction industry. However, such moves are not to be accomplished overnight, and in light of the emergency, may be considered secondary to the suggestions previously made.

Rental housing can be made an attractive investment. It can be made so without the sort of artificial aid and protection from government that eats away the essential characteristics of private initiative. But it cannot be done without removing the artificial hazards and deterrents resulting from existing law and governmental policy. If these adverse conditions are corrected, rental housing will have an appeal to the type of equity investor who is content with a moderate average yield over a long period, who is not concerned with liquidity as of any moment, and who is strong enough to weather the fluctuations in the rental market. Such investors exist; and they will enter the market, if law and policy are not rigged against them.

It is time to get down to earth and move ahead.

LET'S LIFT FEDERAL TAXES FROM HOUSING

By Herbert U. Nelson

Executive Vice-president, National Association of Real Estate Boards

THE federal tax burden on housing is heavier than most people realize. It amounts to about 20 per cent of the income of a taxpayer expended for principal payments in buying a home or for rent payments. That is quite a little load.

Representative Knutson and others are talking about lifting federal taxes to some extent. A 20 per cent cut is being discussed. Why not lift it from housing? This would be a better incentive for home ownership and for better housing for tenants than all the subsidies, all the public housing, and all the meddling that the federal government can do.

1. Principal payments made upon the purchase of any house, farm, store or property to be used by the individual taxpayer would be deductible from the federal income tax up to the amount of $2500 a year and to a top limit for any individual of $25,000. This means that the taxpayer would save the tax on his principal payments which would amount to about 20 per cent for everybody.

2. Tenants who are taxpayers would also be given deduction for rent paid up to $2500 a year and up to a limit of $25,000 for any taxpayer. This means that the tenant would save about 20 per cent on his rent bill, and he could use that for occupying better quarters.

3. In addition to deductions for principal payments and rents, deductions should also be permitted for maintenance, operation, heating and like expenditures on real property owned and used by the occupant.

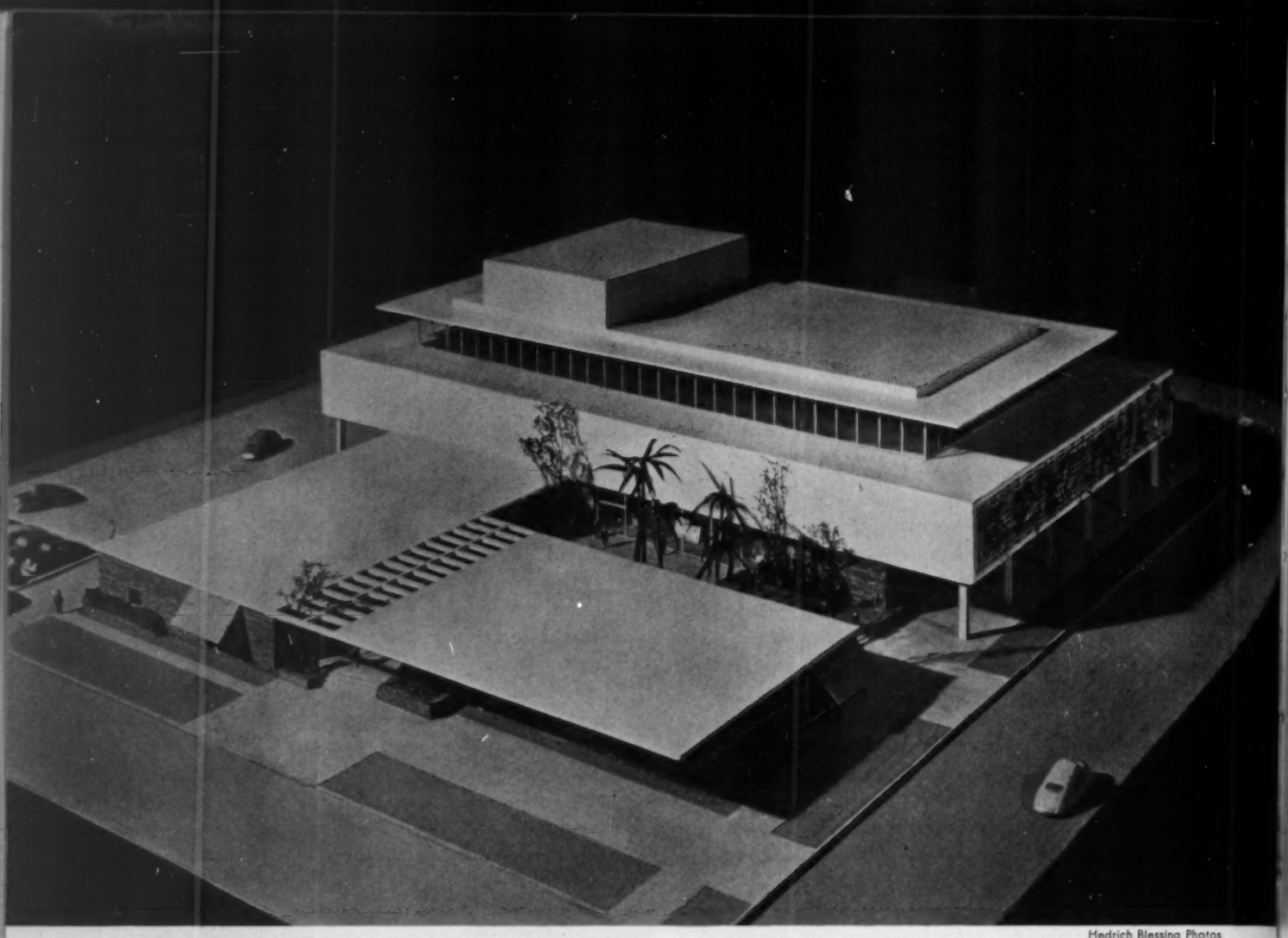
The point is that every taxpayer would get a total deduction up to $2500 which would apply on all his payments for real property and its uses.

As to operating costs, all this does is to put the owner of property who uses it himself, for a purpose such as a home, on a parity with a business which can deduct operating costs.

This is not a federal subsidy. The federal government is not subsidizing anybody when it refrains from taxing income used in certain ways.

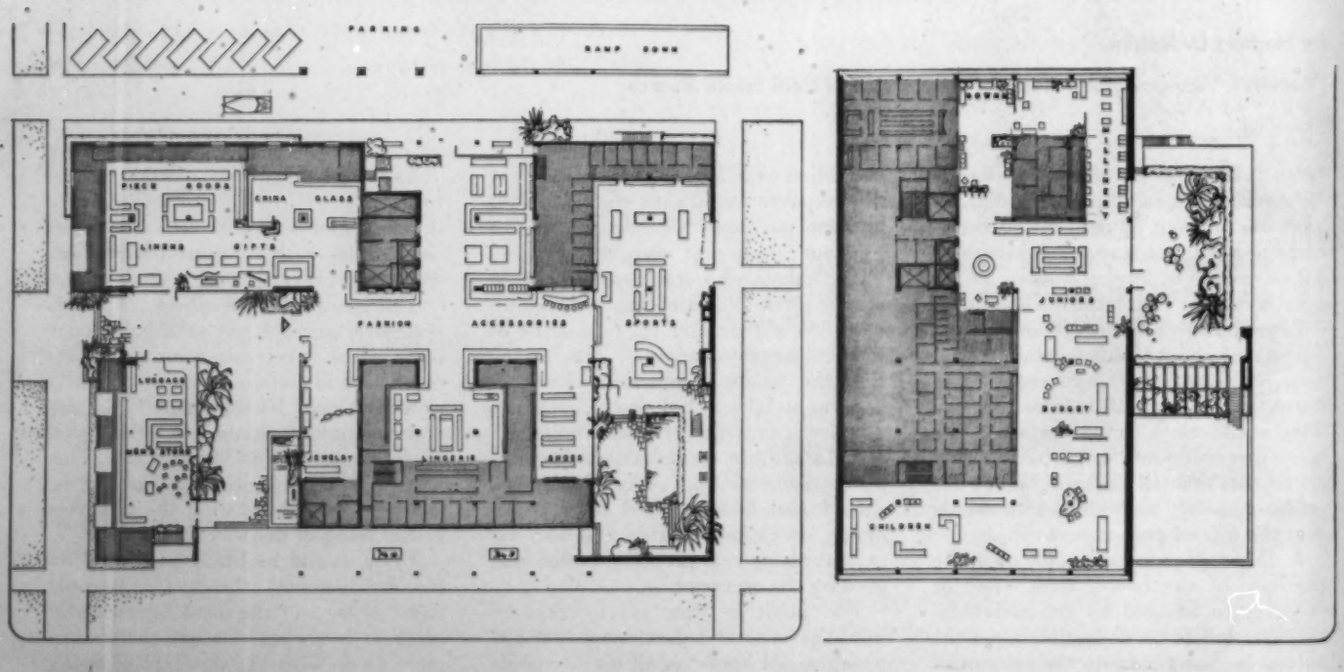
What would be the result? The federal government would lose taxes which might run to $3 or $4 billion a year. This is, of course, an enormous sum. It is, however, just about what the Congress is discussing in the way of a tax cut.

Taxes should be lifted first of all on the fundamental things that people have to use and the most fundamental of these is shelter. Decent shelter has more to do with the standard of living than any other single necessity.



Hedrich Blessing Photos

Goldwater's new fashion department store in Phoenix, Ariz., will present in application most of the principles outlined by Mr. Owings, starting across-page. The exterior, as well as expressing a personality very much in harmony with local determinants, evolves naturally from a precisely studied functional interior, where departmental groupings and inter-relationships are organized on the preferred horizontal basis. Shaded portions in plans below are stock, dressing room and service spaces. Not shown in plans are beauty shop, restaurant and epicure shop on third floor; stock-handling, storage and office spaces in the basement. Skidmore, Owings & Merrill, Architects



FIRST FLOOR SECOND FLOOR

STORES: ARCHITECTURAL RECORD'S

BUILDING TYPES STUDY NUMBER 122

C. H. Rost's Variety Paper

ECONOMICS OF DEPARTMENT STORE PLANNING

By N. A. Owings, of Skidmore, Owings & Merrill, Architects

In the days of bustles and mustache cups, a merchant expanded his business premises, with increasing trade and prosperity, about as easily as letting out his vest. He tacked on wings and additions or, with almost equal facility, skipped to more commodious locations. In either case, the expansion was accomplished usually with an unpremeditative vigor, taking small account of internal space harmony and economics, or of the store's future external relationships. Moreover, as the city complexly grew up around him, and expansion space became less available, the merchant further let out his seams with diminishing ease and grace.

Prior even to the First World War, and during the 'Twenties and 'Thirties, the process of growth by jump and accretion gave way increasingly to a developing science of department store planning. But manifestly not enough! Too often mere symptoms of disorder were treated to the neglect of underlying causes. Architects today are hearing wails of distress in almost unanswerable profusion from merchants who discover their stores, in the Postwar II era's dawning, hugely ill-conditioned to gather in their share of the promised greater abundance.

Some cases can be diagnosed and ministered to only on the basis of removal to new locations. But just as many complaints of insufficient and ill-located space can be diagnosed and treated on the spot as *inefficient usage*.

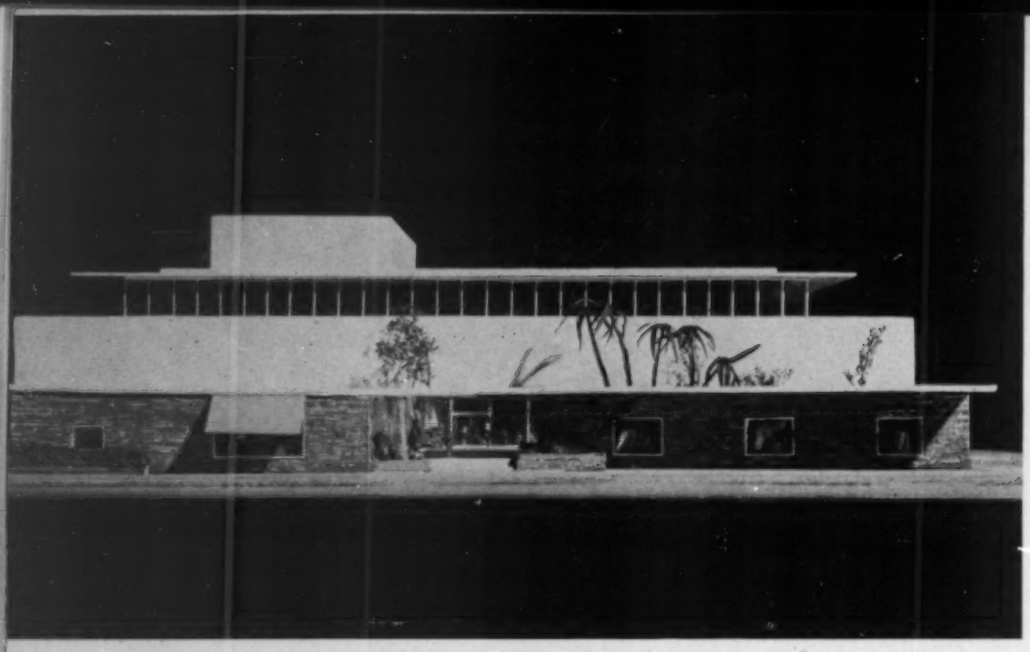
GETTING THE CASE HISTORY

In all cases, whatever the ultimate therapy, whether relocation or treatment *in situ*, our first procedure as physicians to the ailing store is to get the patient's complete case history. On this basis we plan and apply a program of treatment which will insure health functioning not for a year but for the next 20 — to the fullest extent of our ability to anticipate, through statistical means and imagination, the affective trends and conditions brewing up for the years ahead. Broadly speaking, the factors shaping a store's "past" are, first, its general type and purpose, and, second, the extent of its business and how it grew.

Department stores, like other major organisms, have general purposes, policies or guiding themes which make them distinct "types" or personalities. And their own types depend largely on their customer types, and the ranges and kinds of merchandise carried to serve them. Customer types depend, in turn, on geographical, distributive and transport factors, occupational and income characteristics (professional, business, factory, farm), provincial factors such as conservatism and high stylishness, and on age groups and special activity patterns — a store in a college vicinity, for example, will be correspondingly oriented. Customer types of course vary according to different departmental appeals within the store, but in the aggregate we almost always find a pronounced composite personality.

Merchandise carried to suit the varying customer types falls into the following general categories: women's apparel; women's accessories; men's apparel and accessories; children's apparel and accessories; home furnishings and equipment; miscellaneous items such as notions, piece goods, stationery, books, luggage, and gifts. Probably there are no two stores existing alike in their combinations and proportions of merchandise lines, nor in the amount of emphasis they put upon each.

In these respects, stores are further broadly classifiable as "fashion," "home" and "volume" types. A fashion store, such as those on New York City's Fifth Avenue, may carry all the above listed categories of merchandise, including home furnishings, but puts greatest emphasis on women's apparel and accessories, or carries these exclusively in a general atmosphere of high modishness. A home store is generally understood to be one that carries all categories and makes no partisan distinctions, in a spirit of leisurely "folksiness." Volume stores carry all categories of merchandise in thoroughgoing ranges, and concentrate on mass selling at lowest prices and with huge turnovers.



First-floor walls will be Indian-red sandstone, with pink and yellow undertones; upper floors, stucco and glass. Metal trim will be nickel silver. Interior flagstone paving will be light buff pink, with sporadic inserts of dinosaur tracks (genuine). Entire store "is one great display case." However, supplementary street show windows, visible on this side (west), will display second-floor merchandise

GROWTH OF BUSINESS

The next phase in the case historical procedure is a review with management of the organization's size and growth over the years, and all the variable factors contributing to its complex of business operation. It is essential in this respect to recognize that increases and declines in a store's overall dollar volume are by no means absolute indices to its operational efficiency. Volume fluctuations must be exhaustively analyzed in terms of variations in the "personality" determinants enumerated above. Relative interpretations must be made also with respect to competing stores and other types of business in contingent areas; and, finally, broad regional and national factors in store and other business, manufacturing, and buying-power trends must be analyzed and related. It is here that we begin the crossover into thinking and planning for the future.

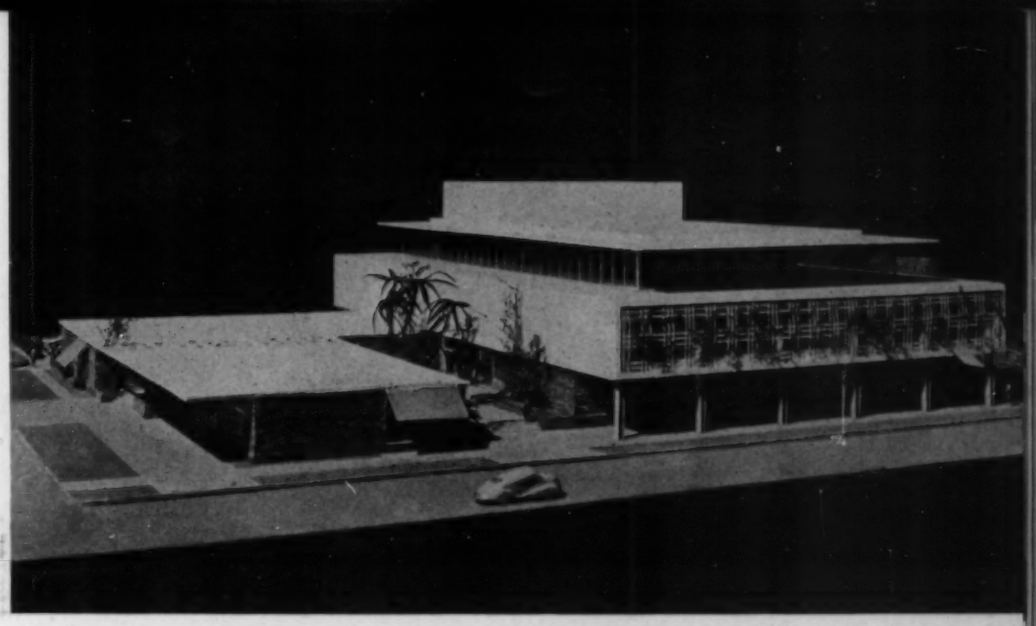
Comparative analyses and data lead us into preliminary considerations of potential and prospective dollar volumes. Often we are able at this point to commence sketching the broad outlines of our long-range program for achieving and sustaining a business volume for the next 20 years, or whatever the practically agreed upon period. Our investigations may reveal that certain customer elements are being served inadequately not only by our store but by competitors as well. Perhaps a particular age group is being neglected (baby furniture), or an income bracket (low-price shoes) or a fashion facet (high-style millinery). Perhaps it will be obvious that a customer service such as fur storage must be added or expanded. Whatever the particular indications that may emerge, comparative analysis almost invariably reveals whether or not desired and likely dollar volumes can be achieved within existing and slightly or extensively modified premises; whether, to what extent and where, branch stores may be feasible; or whether the best answer may not be wholesale removal to a new location in keeping with essential population, urban, competitive, and real-estate changes, and shifts in transportational emphasis. All such considerations are to be framed, of course, within the store's historic type and policy. Violence must not be done to its personality.

GENERAL SPACE REQUIREMENTS

Future dollar volumes and contingent space requirements for the store as a whole are obviously not to be accurately and finally calculated without minute examination of each internal department, its individual volumes and requirements — past, present, and future — and comparative analysis of each department in terms of others within the store, and of other similar departments in the region, state and nation.

Before undertaking examination, however, of departmental members, let us make a few generalizations concerning larger areas within the store as a whole. Interior space may be differentiated under three headings: *Selling Area* includes space not only for actual sales but also for forward stock (not to be confused with reserve or remote stock). *Service Area* contains offices; wash and rest rooms; space for merchandise handling and storing (much of this activity may be allocated to a separate warehouse); window display; auditorium, hospital, etc. *Occupancy* implies space for the installation and operation of elevators, stairways, chutes, conveyors, ducts, etc.

For every sq. ft. of selling area we figure roughly on 2 sq. ft. for non-selling — for service and occupancy as indicated above. On a recent job which may be considered typical for a complete-line, high-volume operation, we show the following percentages of space allocation: selling area proper, 29 per cent; service and aisles on selling floor, 3 per cent; *total selling area, 32 per cent.* Service in store proper, 21 per cent; in warehouse, 37 per cent; occupancy, 10 per cent; *total non-selling area, 68 per cent.* The lower the store's volume and the narrower its scope of merchandise, the higher will be its proportion, naturally, of selling to non-selling space. We cite the above generalizations and figures simply as rule-of-thumb guidance in planning a particular store's preliminary area prospectus. The only generalization that we can confidently apply to *all* cases is: first, determine the store's selling space according to particular type, scope and comparative analytical data; let determination of the non-selling areas follow in due respect and proportion.



Structurally the building is a series of slabs on columns, with walls acting only as screens. Open planning and maximum use of glass (planting and overhangs prevent glare) "bring the outside into the store." Sales and fitting areas benefiting from natural light are located accordingly. Minimum light exposure is toward the "torrid" west. Top-floor restaurant is oriented north and east for coolness and scenery

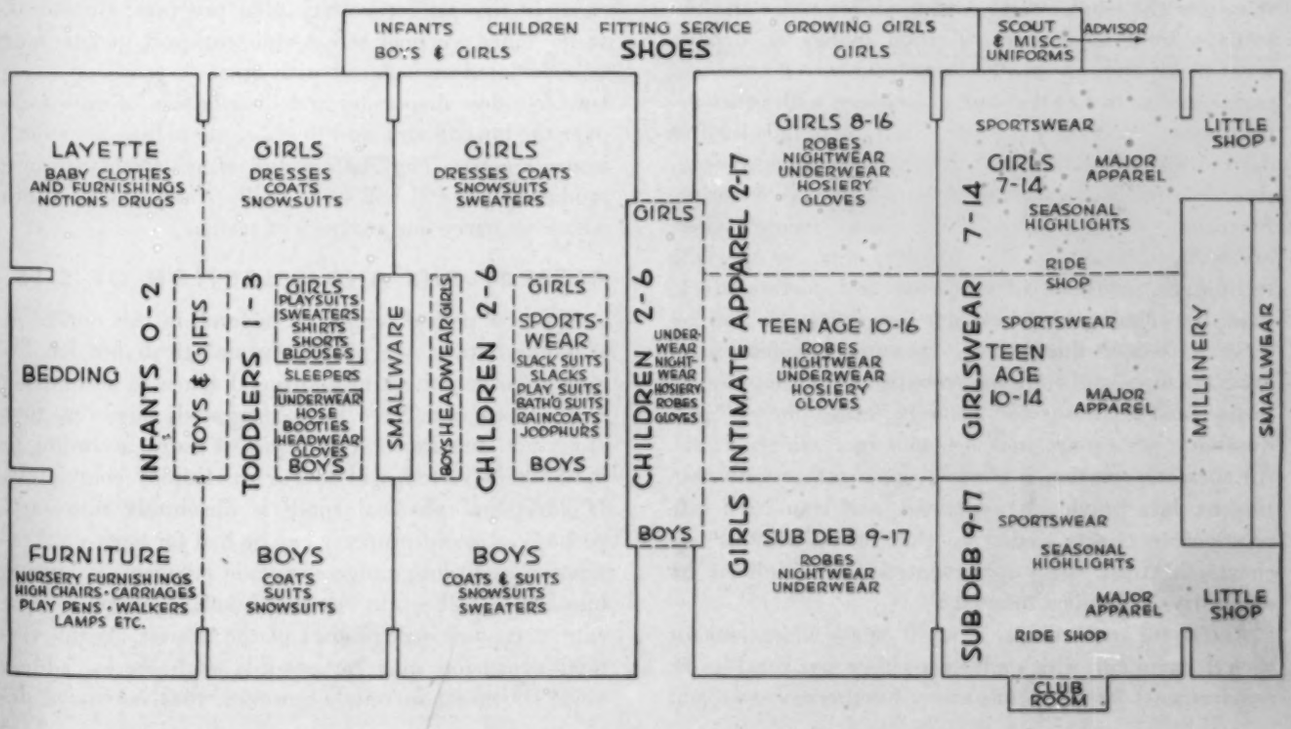
DEPARTMENTAL CASE STUDIES

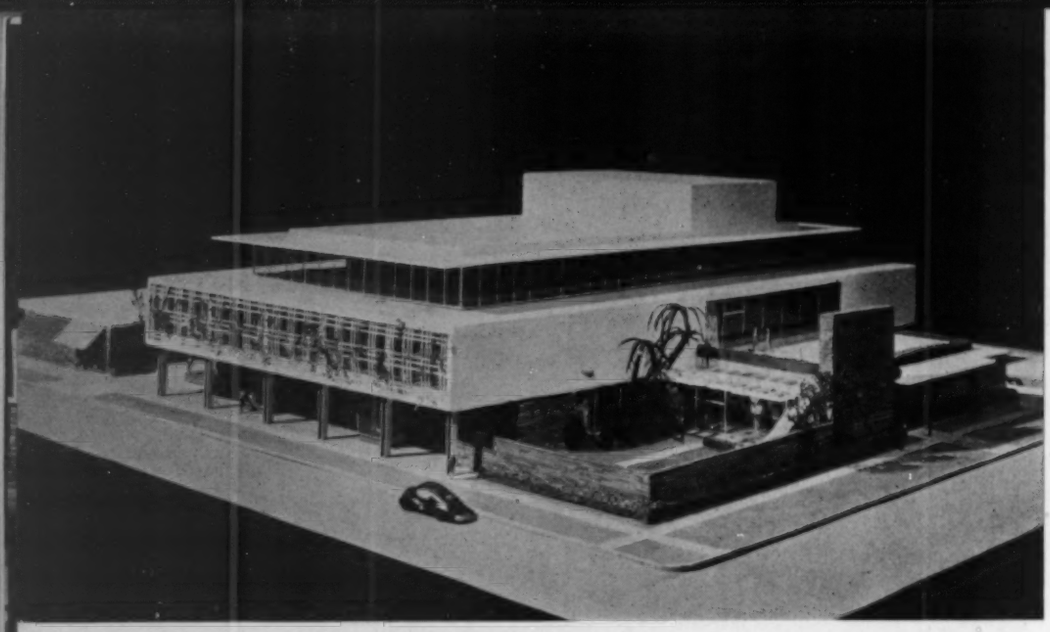
We have previously acknowledged that overall space requirements, in terms of optimum dollar volumes, can be calculated precisely only on the basis of desiderata for individual departments. Optimal volumes and space allocations for each department may be based to some extent on comparison with similar departments in other stores. But *similarity* is an elusive quality to define. A store's constituent departments are affected not only by all the external factors heretofore cited, but also by internal variables which are best illustrated in a system some stores have of charging their departments "rent," as a means of check and control. In this system, the store maintains a rent chart showing the boundaries of each department, the number of sq. ft. it occupies, and the rental per sq. ft. Rental rates are not uniform throughout the store, being highest on the street level and progressively less on the floors above. Even within each floor, rents are not uniform, but vary with preferred location according to escalators, main aisles, etc.

To afford the first-floor rentals, merchandise must, in addition to being largely "impulse," be of high-fashion, glamorously attractive type, producing high unit profit as well as generous turnover through its relative expendability or rate of obsolescence. Hosiery, for example, is a first-floor natural. Furniture, with a transaction ratio to hosiery in one store last year of 1:31, is "demand" merchandise which may be departmentalized on top floors, or even in adjacent low-rental buildings.

If in 2000 sq. ft. of space, a department does $200,000 worth of annual business, its sales per sq. ft. (and rental rate) is $100. In setting future volumes and space re-

Relationship chart below shows basis for eventual space allocations and layout of departments in terms of their inter-association





Free-standing show cases visible under overhang are lowerable to basement for trimming. One-story men's wing (far left) gives complete segregation, yet directly across court (see plan) are all most likely women's gift items. Court in foreground opens off sportswear section with huge fireplace. Court has high walls for tea service and winter fashion shows; the second-floor terrace is for summer shows

quirements, this figure, together with volume of transactions, is useful in comparison with similar departments in comparable stores only if weighted by consideration for the internal locational differences implied above. Also there may be differences in departmental "atmosphere" or sales technique, requiring more or less area, which must be duly considered. With such requisite weighting, then, we proceed in our determination of departmental areas, to be met with further factors.

Manufacturers, more and more, are supplying merchandise to suit the *individual*, making clothing not only by size but by figure proportions, and with greater style differentiations within each size to appeal to differing age groups. Mother, child and grandmother no longer buy together in a single dress department, but go to their respective individual "shops." All of which complicates our schemes for departmental interrelationship.

As background for this planning phase, we compile departmental case histories and check lists similar to those for the whole store, getting philosophies and objectives from appropriate division managers, department heads and buyers. We learn from each his order of preference as to location and association with other departments. We gather complete data on details such as desired display, selling and fitting-room space, decorative treatment, types and arrangement of fixturing. Fixturing — the furniture which houses forward stock and from which it is sold — involves analyses of selling techniques, methods of receiving and sorting stock, quantity relationships between forward stock and reserve, seasonal fluctuations (toward possibilities of doubling up), and unit merchandise dimensions (even in the most luxurious and leisurely "atmospheres," productivity per square *inch* becomes increasingly vital). All such information is worked up, together with contingent data previously explained, and translated into relationship charts similar to that on page 89. These charts, in turn, are supplemented and amplified by exhaustively detailed manuals.

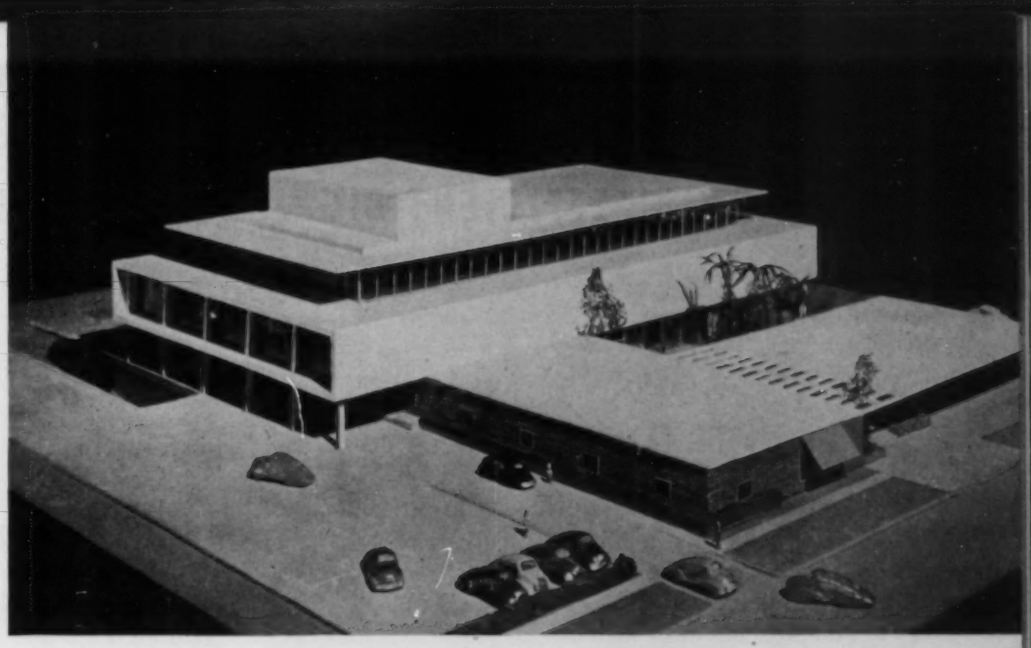
And so we arrive finally at sq.-ft. space allocations for each department, which added together give total sq.-ft. requirements for the whole store. Furthermore, we add together the individual optimal dollar volumes and relate the total to the preliminary optimal volume obtained for the entire operation. As a further check, we divide the median sales-per-sq.-ft. of all departments into the whole volume figure which again gives us total space requirements. These, in turn, are related back to our original calculations.

Having more or less determined selling space, we set about after *service* and *occupancy*, within the rule-of-thumb rationale of 2 to 1. Here we become further involved in questions of receiving, marking, reserve storing and otherwise handling merchandise, calling for case studies and check lists, in these respects, with due regard for each selling department concerned. Effortless and economic free flow of merchandise, to, from and around departments, using such mechanical means as conveyor belts, chutes and subveyors, requires as much traffic study and planning as any big city problem.

Customer traffic, too, of course, is just as vital an element in this miniature city plan program. Entrances, traffic lanes, vertical access and transport means must be calculated and placed with greatest precision to insure free-flow dispersion and distribution of customers over the lower floors, and to entice them into the store's upper reaches. The "before and after" street-entrance studies on page 91 will serve to illustrate the detail into which we carry our analyses of traffic.

ALTERATIONS AND SELECTION OF SITE

We have passed somewhat beyond, in this outline of planning details, the proper chronological spot for discussing procurement of additional space to accomplish desired programs. We have suggested, however, that study and amelioration of *inefficient usage*, according to methods indicated, will cure a great many complaints. If additional physical space is absolutely necessary, perhaps adjacent property can be had for horizontal expansion, with long-range economic prospects balancing immediate real-estate considerations. Perhaps a separate warehouse will be part of the answer. Again, vertical expansion may be possible with stories added, always keeping in mind, however, that *horizontal* de-



"There is no front or back to the building"—an estimated half of customers will enter from this parking lot side. Observe ramp to far left for trucks. Foreground wing segregates non-apparel from clothing departments, for convenience in customer service and merchandise handling. Small show windows display glassware, jewelry. Second-floor windows serve sales and fitting areas requiring daylight

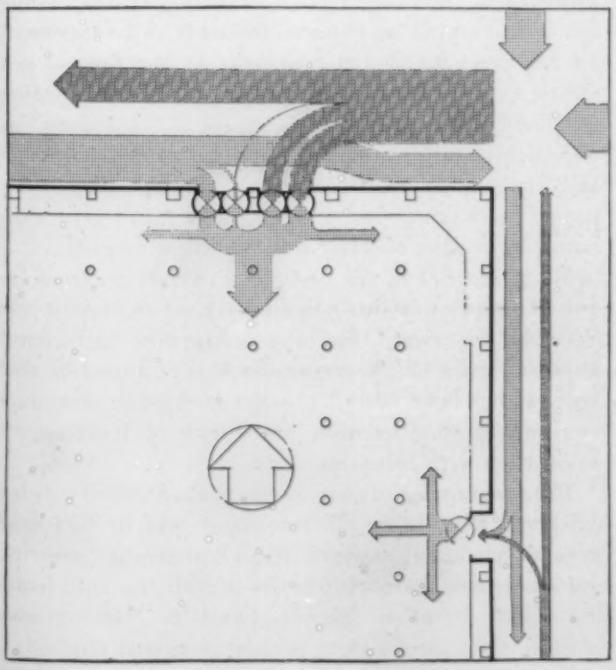
partmental relationships are vastly preferable. Basic merchandise categories add up to only five, which, with strictly operational and service departments, suggest an ideal limitation of six or seven stories.

Horizontal relationships should also be kept in mind in the selection of a new site (with due consideration, of course, for all the external variables such as zoning, transportation, and other trends and conditional factors heretofore implied). These were primary determinants in selecting a site for Goldwater's, illustrated on these pages, resulting in a low, large-area structure in which we could achieve the horizontal relationships of maximum advantage. Our use of the Goldwater site, incidentally, gives as much area to customer parking as to structural occupancy. Calculations for area required were based on five-a-day car turnover per individual space. The problem of automobile parking is unquestionably as crucial as any other on the planning list, but space limitations force us to treat it here simply by reference to previous studies (see ARCHITECTURAL RECORD, Nov. '44, pp. 90–96; Feb. '45, pp. 86–96).

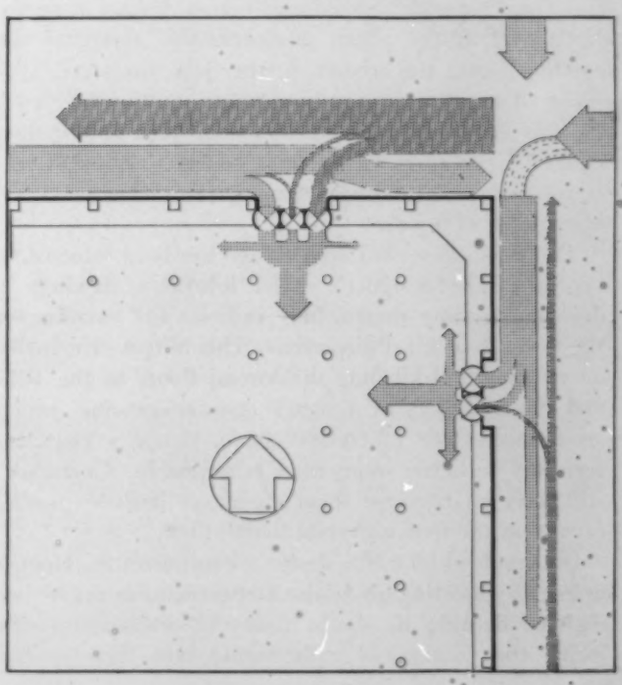
* * *

In concluding this brief sketch on bases for planning, we shall take a final crack at the bane of *inefficient usage*, with a hopeful prediction of even more scientific planning for the future. Analysis of merchandising functions can be much more detailed and precise. Provisions for seasonal and general market fluctuations will be more far-sighted. Emphasis will continue to shift from "interior decoration," and unproductive doodling, to an architectural treatment progressively subordinate to the main issues — merchandising and customer service.

"Before" study (below) shows bad street-entrance arrangement



"After" study (below) shows improved customer distribution



FOR A MORE EFFICIENT BIG VOLUME STORE

BROOKLYN's Abraham & Straus, since the 1870's, has been growing in a way considerably reflecting that of its surrounding borough. In the plan across-page, 1875 marks the first building in an accretive series that now, with 1947, is being shaped into more cohesive, economic unity.

The problems dealt with here by Herbert Davenport, and his A & S planning staff, are undoubtedly suggestive of those facing many store architects today, called upon to create more efficient space for increased volumes within existing limits.

To the five-story 1875 structure, extending originally through the area marked 1947, was added the seven-story 1890 building; followed by 10 stories in 1930, for which Starrett and Van Vleck were the architects. One of the difficulties imposed by the 1930 addition was a disparity in floor levels. Equalization between the new and the old occurred only at the latter's top levels, to the continual mystification and irritation of customers who, by passing through a doorway and without benefit of vertical change, found themselves suddenly transported from the fourth floor to the fifth. In addition, placement of the new elevators, in conjunction with the former grid arrangement of selling departments, caused a relatively poor dispersion and circulation of customers in the old building areas.

One of Davenport's original thoughts was to move the elevators, at the same time reducing their number, to a position against the Livingston St. wall (right, in the plan). He contemplated adding two banks of escalators: one, since more customers enter from Fulton St. (from left in the plan), proportionally alongside the existing bank; the second, further into the store, at a point of triangular apex in relation to the other two. It was determined later, however, that the budget could be spread more advantageously over other improvements, and vertical transportation has been left essentially as it was.

The third-floor plan across-page has been selected as typical of the designer's major solutions, although it does not by any means fully indicate his handling of the lower-floor level disparities. This hinges principally on treating and labeling the second floors of the 1875 and '90 buildings as a men's store mezzanine, which accomplishes for the floors above, if not a physical, certainly a better numerical relationship. Customers still have to traverse short stairways between levels, except on the now universal fourth floor.

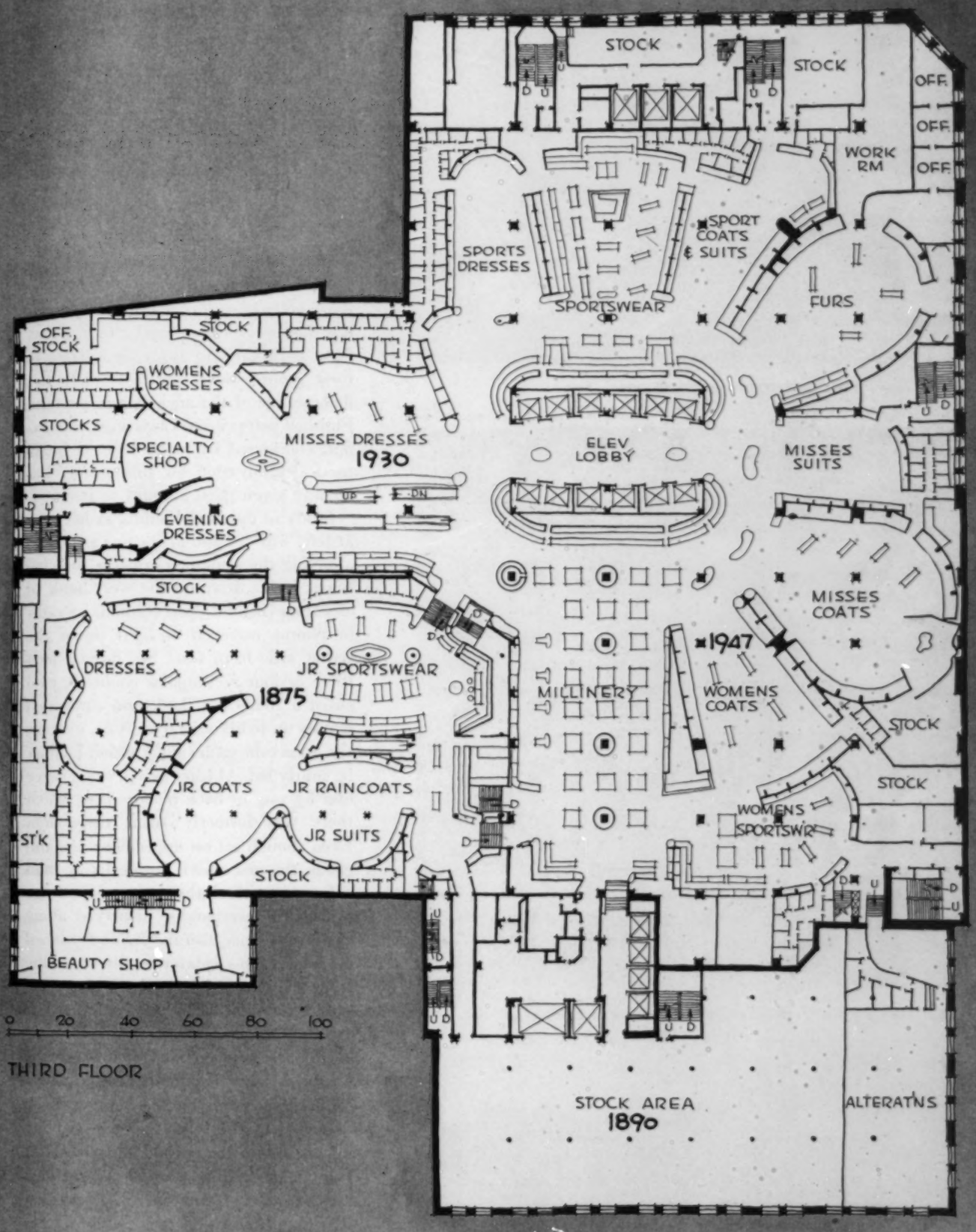
On the third floor, the designer capitalizes the change in level by locating his Junior Department in the higher regions, figuring no doubt that the enthusiasm with which the young and agile bound into their special precincts will transmit a degree of buoyance to accompanying elders. Contiguous to the Junior Department is a Beauty Shop. Beneath it are the Thrift Fashion Departments, to which thrift-inclined customers can descend from the regular departments by a short stairway, rather than by lengthy routes to traditional bargain locations in the basement.

Believing not only that the arrangement of elevators weighed against it, but also that absolute adherence to canons of "free-flow" planning was for other reasons not entirely practical at A & S, the designer has yet achieved much of the feeling and effect of this system in his convolving layout of departments. At the same time he has been able to observe minimal aisle clearances and to retain much of the original grid-plan fixturing. Wide dispersion and circulation of traffic are secured by an action somewhat centrifugal. Customers are deposited by elevator and whirled away to the outermost selling reaches by a compulsion that can almost be felt in study of the plan. His arrangement, moreover, achieves the second great objective of free-flow planning: the provision of reserve stock and fitting-room space immediately adjacent to — in some cases almost surrounding — the appropriate departments.

Like many another department store planner, this designer acknowledges that the most desirable means for receiving, sorting, marking, storing and otherwise handling stock merchandise of each selling floor would be through a complete service extension at each level. Infrequently, however, can store management even conceive of devoting the potentially valuable selling space that would be required for such an arrangement. In this case, the designer thought at one time of providing a narrow "service periphery" completely girdling the floor. Final analysis, balancing all considerations, required that the scheme be retracted to space provided at each level by the 1890 building. In the plan across-page, "Stock Area" connects with a large adjacent warehouse by freight elevator and sub-street tunnel.

Many niceties in the designer's overall program can only be implied in this necessarily brief treatment. For example, silverware, for long occupying "high-rental, impulse" space on the ground floor, in conjunction with jewelry, has been moved to what is considered a much more appropriate location on the fifth, in departmental association with china and glassware.

The program is not to be accomplished entirely within existing limits. More efficient usage will be had from present space, but new groupings and arrangements require nine new floors on the site of half the 1875 building. This alteration (Shreve, Lamb & Harmon were architects for the building proper) is almost finished.



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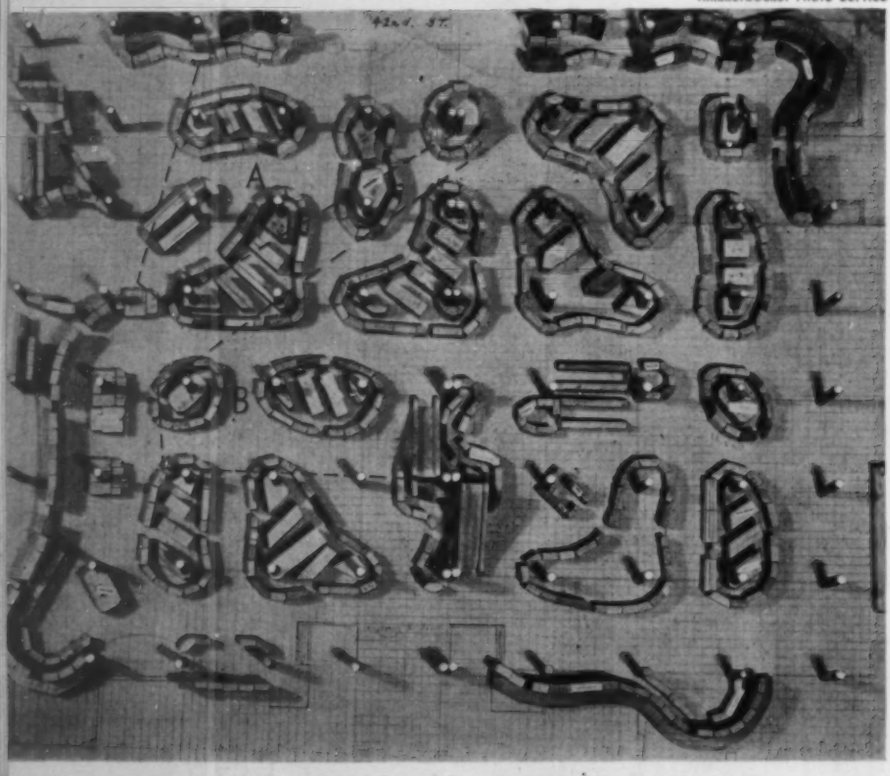
THIRD FLOOR

Above: View "A" in photograph of layout model, below

Knickerbocker Photo Service



Below: View "B" in model, looking toward up-escalator

Top and bottom photos by R. E. Leppert, Jr.

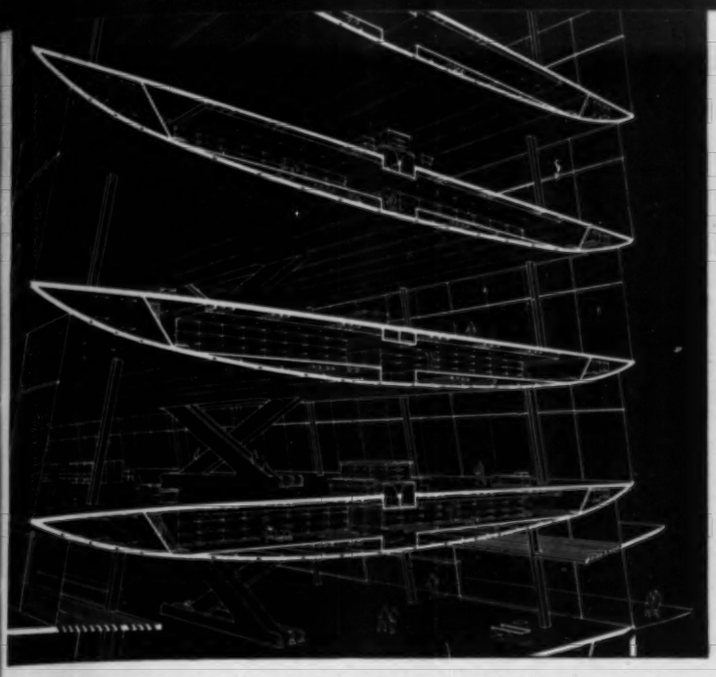
FREE-FLOW PLAN IN A CITY STORE

Grand Rapids Store Equipment Co. Designers

SUCCESSFUL experimentation on upper floors, with a thorough-going "free-flow" arrangement of aisles and fixtures, late last year encouraged Stern Bros., New York City, to apply the system to their ground floor, the last really hot defense line of the ancient grid pattern. Finished just prior to Christmas, the lay-out, considered by many to be a brash tactical innovation for this sector, has already given good account of itself.

Study of the model photo, in between at left, will disclose many fine points in applying the system. Formerly the customer in his drive on the west bank of elevators (behind open columns at right in photo) marched straight down the center aisle from 42nd St., flashed past three or four rectangular counters, executed a sharp left flank and continued briskly on to his objective. Now, observe the numerous paths along which he may be subtly led. At least two of them carry him by way of back reaches into which there was formerly scant dispersion. Even though set on upper-floor demand goods, the customer is far less likely than before to overlook the increased frontage of impulse merchandise displayed along the way. Notice also the "island" placed before the up-escalator to divert traffic from unseeing axial penetration.

This does not mean that customer circulation is retarded by bottlenecking. There are nowhere any point-to-point distances less than in the aisles of the former grid plan. Furthermore, the ins and outs of the selling islands provide not only more display and under-counter storage space than the old system, but less personnel — and this will be certified by management — is required for operation. Also, all the counters are continuous; there are nowhere any square ends to "stop" a customer. Another advantage put forward is easier access and greater flexibility in the use of behind-the-counter fixtures. Sub-departments within islands may with greater facility be adapted to seasonal fluctuations.



INTERMEDIATE FLOORS FOR GREATER EFFICIENCY IN STORAGE AND SERVICE

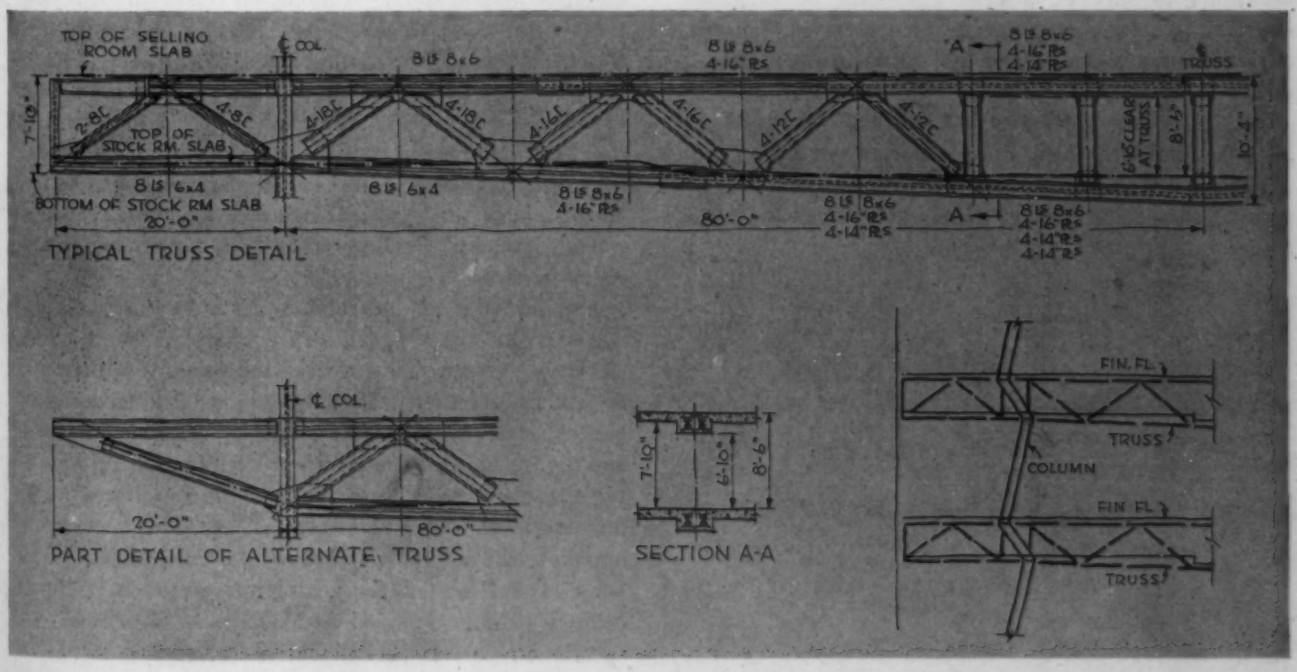
By Dr. Louis Parnes, A.I.A. ***Master in Architecture and Doctor of Technical Sciences, Federal Polytechnical University, Zurich. 1931–1940, taught, and practiced architecture—in the office of Le Corbusier — and elsewhere in Europe and South America; 1935, published book on Department Stores (in German) in which he developed briefly the intermediate stock-floor proposals detailed below. Since 1940 has practiced architecture from New York offices***

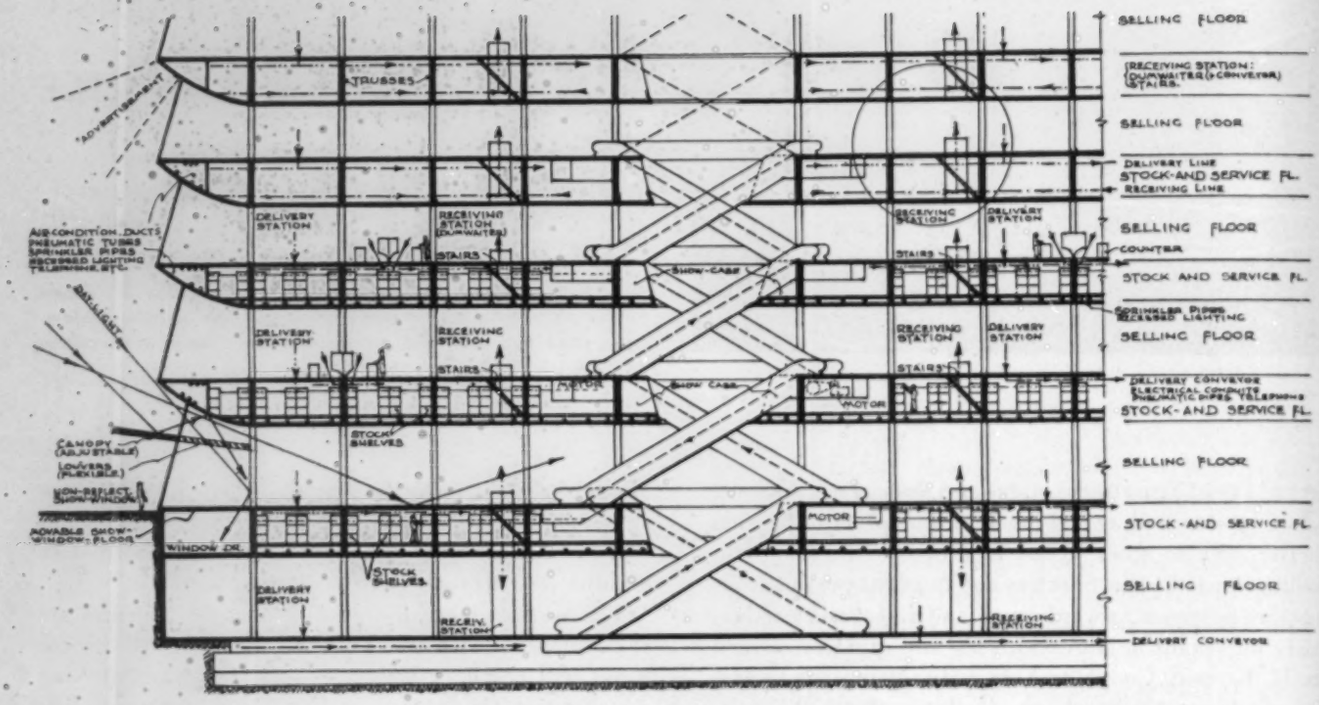
SURVEYS of department stores and shops, recently built or modernized, reveal much serious effort to provide better organic stock areas, in direct connection with selling departments. Shortest and quickest possible connection between forward stock and reserve is particularly important in stores with big and rapid turnovers. S. H. Kress & Co., New York City, at present locates its whole reserve stock on six floors above the first, on one of the most expensive plots of real estate in the world — Fifth Ave. and 39th St.

Other stores have brought about more direct connection by means of the "free-flow" system. Granting numerous advantages to this arrangement, there still remain these objections: (1) uneconomic absorption by reserve stock of expensive sales space; (2) incomplete and unrational utilization of high ceilinged floors where stocks are located; (3) obstruction of outer windows and exclusion of natural light (and air); (4) completely divided, decentralized grouping of stock rooms.

The proposed organic arrangement of intermediate stock floors (sandwich system) illustrated on these pages will result, I believe, in the following working advantages: (1) reserve stock situated immediately below (or, in addition, above) the corresponding sales departments on each floor, with quick, easy and direct supply at any time; (2) convenient "receiving stations" from stock sections, placed at logical points on the sales floor, alongside interior partitions, columns, selling counters, etc. Receiving stations in lesser operations may be composed entirely of dumbwaiters or subveyors,

Below: structural details for the proposed intermediate stock floor truss. Dr. L. Parnes, Architect; Fred N. Severud, Consulting Engineer





TYPICAL LONGITUDE SECTION

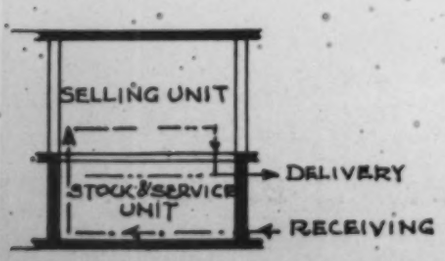
possibly just stairs; in big stores, stations may be connected by a system of interrelating conveyor belts, moving along below the ceilings of the intermediate stock floors.

Further advantages will be: (3) increased sales space through elimination of reserve-stock fixtures; (4) diminished forward stocks at selling counters, increasing potential display space; (5) better opportunity for sales personnel to survey varieties and sizes of available stock; (6) elimination of emergency hand-truck delivery during selling hours, interfering with customer movement; (7) reduction of service personnel and operating costs; (8) greater flexibility in adapting stock sections to space fluctuations of selling departments.

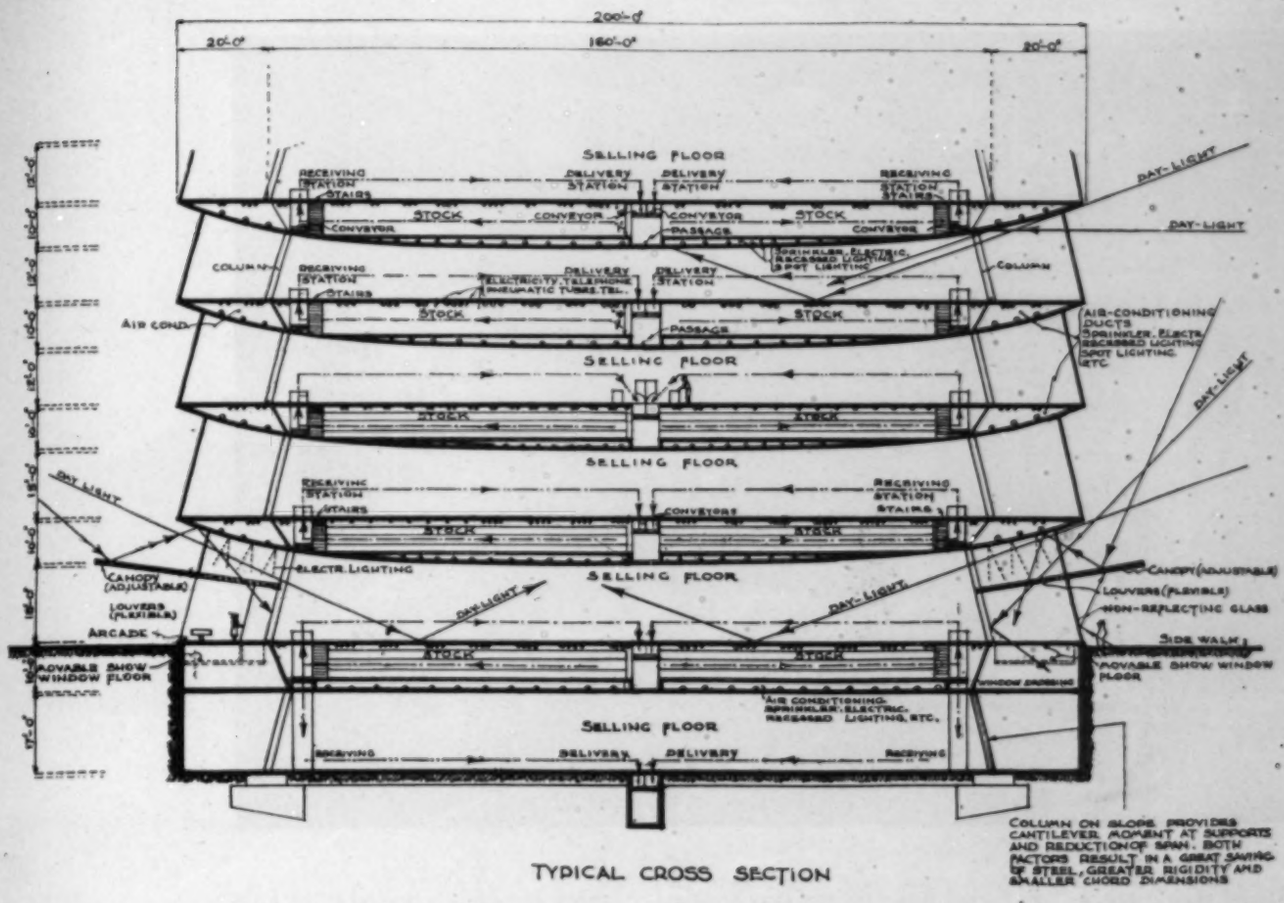
Intermediate floors will carry reserve stocks for given periods of days or weeks, as conditions dictate, with supply connections maintained to remote warehouses by trucking at night, or at other hours when conflicting traffic is light. All large bulk merchandise such as furniture will probably be stored at these remote locations.

Connection within the store between intermediate stock floors will be by usual means of freight elevators, conveyors and chutes. Goods for delivery from the store itself will be deposited, through floor openings at sales counters and wrapping stations, on conveyors carrying them toward elevators, chutes and vertical conveyors which, in turn, will transport them to shipping departments in the basement, or to parking-lot stations for direct customer pick-up. Merchandise receiving, sorting, checking and marking will be in areas closely related to corresponding stock sections on the intermediate floors. Also, I believe it possible to locate workshops, managerial departments, lockers, employee and customer washrooms on intermediate levels.

Further services and advantages that may be contained within them, I believe, are: complete conduit and electrical systems (for general water supply, sprinklers, air conditioning, pneumatic tubes, and for both recessed general, and spot, lighting), making possible invisible and highly "flexible" connections for illuminating counters and show cases, and for operating cash registers, pneumatic and telephone stations, etc. This will eliminate both the unsightly and space-wasting overhead network of such installations, and the uneconomic "false ceilings" often employed to hide them. Moreover, inspection, repair and modifications of such equipment



The system's basic unit; small-shop cell in big store organism



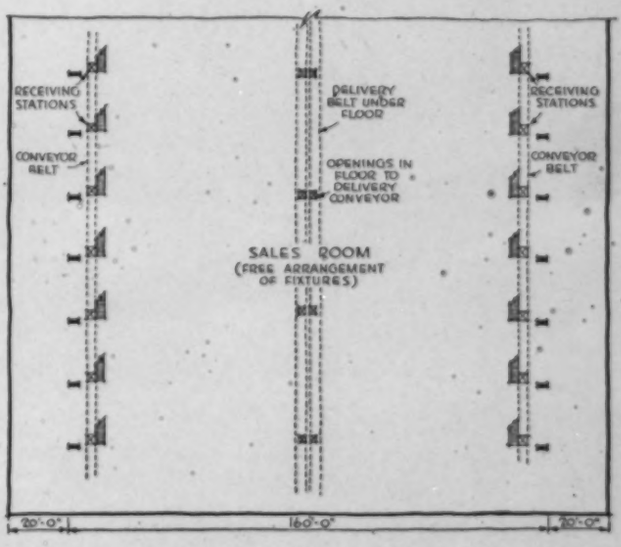
TYPICAL CROSS SECTION

should be considerably easier. Finally, the prodigious motor boxes of escalators can be accommodated within the intermediate floors, both for concealment and greater ease of inspection and repair.

The intermediate storage-and-service floor system, obviously, can scarcely be applied to many existing buildings; it requires something of a revolution in structural concepts and principles. Engineering details for its accomplishment have been worked out with Mr. Fred. N. Severud, and are based on a truss system similar to that employed in factories and airplane hangars. We believe that trusses 9 to 10 ft. high are sufficient for carrying all the weights involved over spans of 200 ft. and more, in keeping with average selling-floor widths of the largest present department stores. Trusses will be placed at intervals of 20–25 ft., corresponding fairly with probable subdivisions of intermediate stock space. Moreover, we believe that our contemplated vertical truss dimensions not only will permit all the installation advantages enumerated above, but will provide sufficient headroom for personnel, with 6 ft. 10 in. adequate at points of horizontal intercommunication through trusses. Note in details (p. 95) the arrangement of truss members at these points.

Notice also in the details the developments possible through column sloping and truss cantilevering which, in conjunction with the static line (biggest bending moment in the middle), permit the parabola-like ceiling over sales floors. This, coupled with elimination of the overhead installation tangle, permits lower ceilings than normal with such spans. In addition these ceiling arrangements increase potential window area by some 30 per cent, and insure reflected light almost up to the mid-point of floors. Also, the up-curve on ground floors permits entry of sunlight behind show windows for reduction of veiling glare (see sections).

The system will certainly be more expensive in first cost than traditional methods, but overall and long-range advantages will, I believe, do it ample justice.

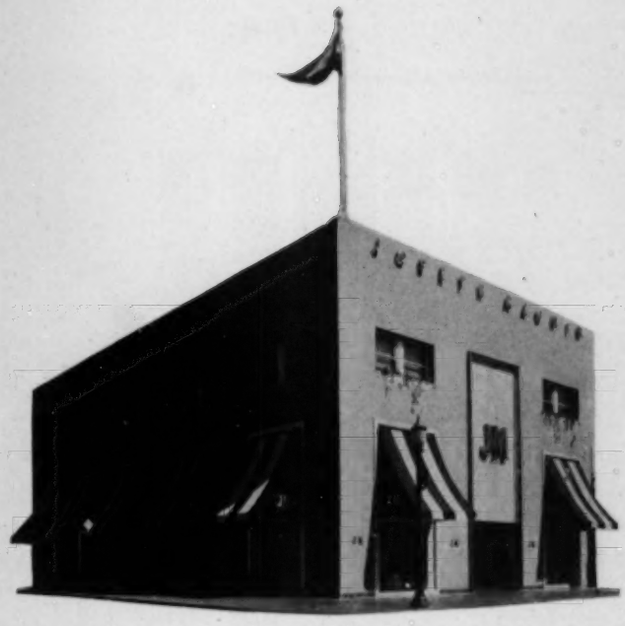


Above: plan indicates stock receiving and delivery systems; selling fixtures may be "free-flow" to aid customer circulation

Philip Fein photos

Above: main entrance; floor is dark green terrazo; door handles, mahogany. Immediately beyond is the foyer with Gift Department to right, circular jewelry case and Handbag Department to left (see plan). Below: main selling area; walls and benches of Shoe Department to left of stairway are covered in dark green leather

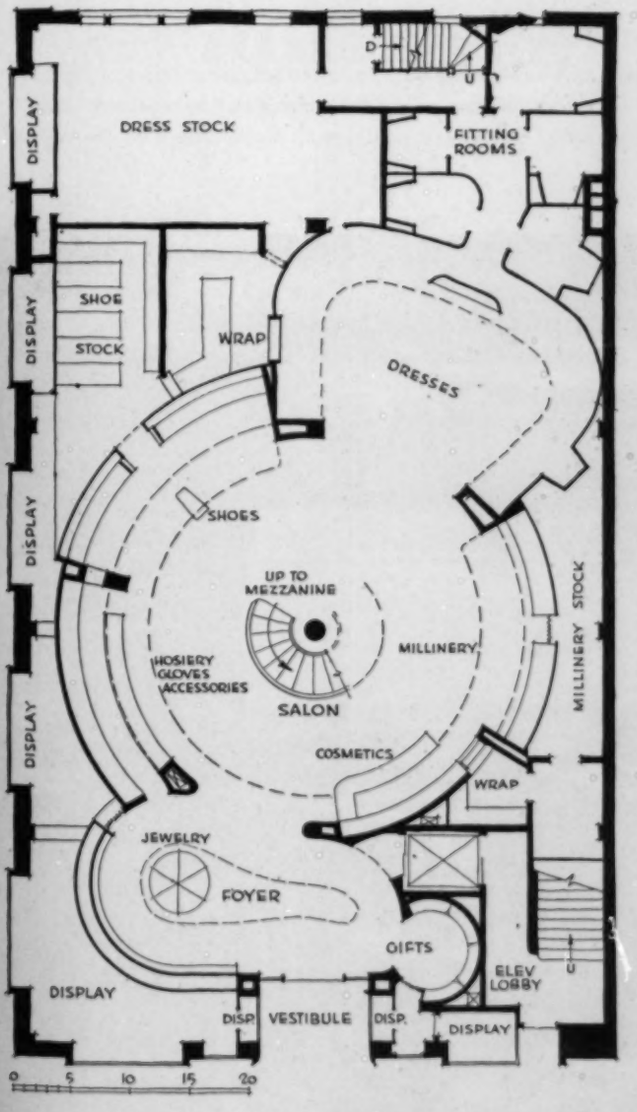
CALIFORNIA DEPARTMENT STORE FOR WOMEN



Joseph Magnin's, Palo Alto

Gruen and Krummeck, Designers

Michael Auer, R. L. Baumfeld, Associates



BEYOND all the questions of efficiency and economy discussed in the pages preceding — the complex issues of storage space and service planning — lies still the crucial matter of architectural treatment to please and beguile the customer, to attract her eye, and her mind and hand, to the acquisition of merchandise — the real crux of the problem.

"Joseph Magnin's in Palo Alto," say the designers, "is a department store for women. It is intended to appeal not only to the women students of nearby Leland-Stanford, but as well to all the women residents of the San Francisco Peninsula. We feel that here the idea of individual shops within a store has been expressed most clearly. . . ."

Individual shops not shown in the plan at left are: Sportswear, Infants and Children, Robes, Lingerie and Corsets located on the mezzanine — a feature partially existing in the original building from which the store was remodeled. A beauty parlor will be added later on the top floor, at present still occupied by offices.

All principal departments of the store are immediately accessible from the main room (bottom photo across-page), either by ground-level contiguity or by stairway — the latter being, as well as a convenience, a contrivance exerting most palpable lure to customer circulation. The Dress Salon located behind it profits by the placing of the approach risers — turned away from the main street entrance.

Exterior of the store (above) is dark gray marble around the base; upper portions, medium gray stucco. Frames around show-windows are white marble; awnings, black and white striped. Panel above entrance is antique Roman marble. Letters "J. M." are gold bronze with concealed neon.

Right: closeup view of departments in main selling area to right of stairway in plan. Cosmetics at right. Millinery beyond; lighting concealed behind mirrors is designed for flattery. Below: view on mezzanine, looking toward Children's Shop

Below: view from mezzanine, across to Lingerie and Corset Department, down to jewelry case in foyer. Splashing effect of light on ceiling is by means of indirect fixtures in the column cap; this general light from the main ceiling is supplemented by recessed "pots." Also, the mezzanine railing contains a cove lighted by cold cathode tubing. Stairway is gold finish; plastic inserts in the railing

Gottscho-Schleisner photos

Above: behind plate glass, to left of door, and above outside showcase are two hanging cases for special displays, illuminated by "bullet-type" spots. Right: Silverware Department; hassock type chairs (designed by the architect) are finished in delft blue leather

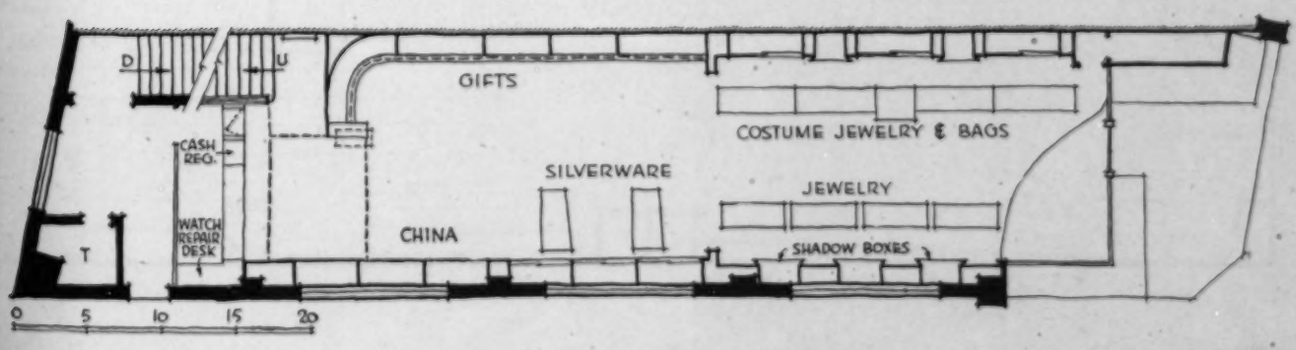
NEW ARRANGEMENT FOR BRINGING THE INSIDE OUTSIDE

J. A. Fernandez, Architect

PROBABLE customers are arrested on the sidewalk in front of this Wiss Jewelry Store in East Orange, N. J., by an almost uncanny feeling of being "through the looking glass." The arrangement of the "showcase" type of exterior display produces a sensation, in a person outside, of being already within the store. The next few steps to the true inside are practically irresistible. The circular ceiling light cove provides the main general light for the front; high lighting of merchandise in outside cases is by incandescent recessed spots along the display windows, both inside and out. Lighting inside is "spot," with fluorescent in cases and boxes.

Woodwork, cabinets, tables and display cases, inside, are pickled oak. Back walls, in china and glassware section, are woodweave, painted delft blue.

Above: open counter across rear of store is wrapping department; offices, behind; Children's Department on upstairs balcony



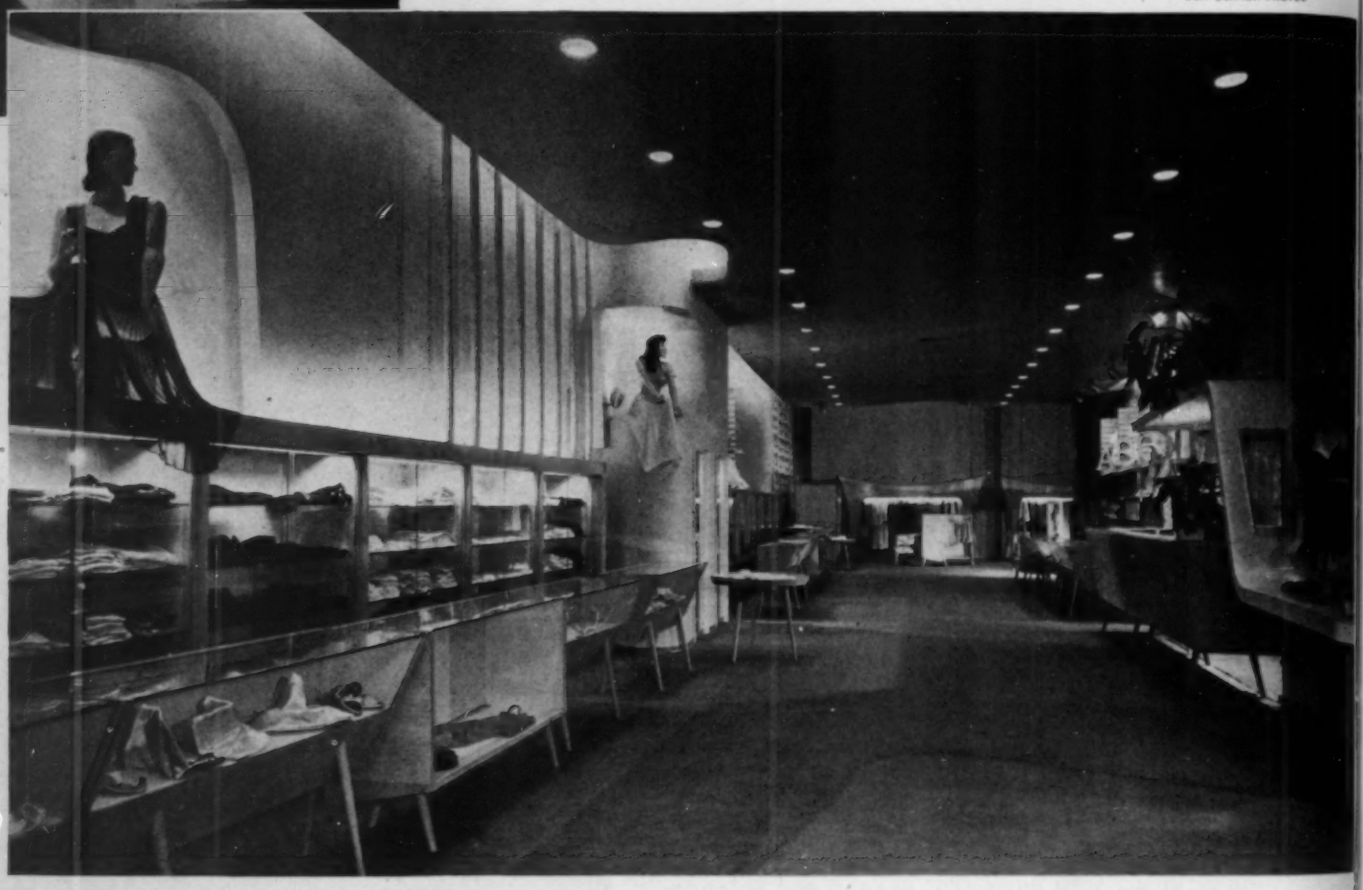
TOWN AND COUNTRY BOUDOIR THEME

L. G. Gluskin, Designer; W. J. Modin, Associated Architect

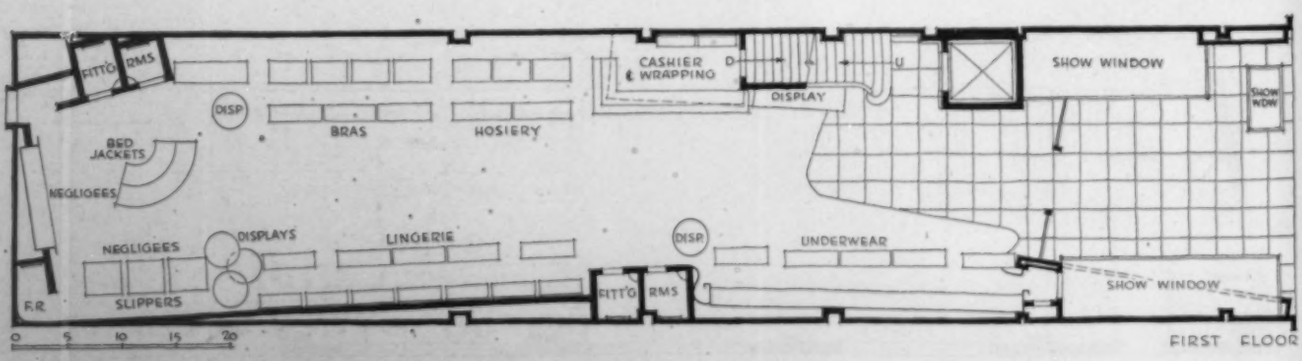
His purpose for Blackton's, Fifth Avenue, New York, the designer says, "was to create an informal boudoir atmosphere for the sale of women's intimate apparel." His use of rough stone in soft hues of pink, orchid and tan, giving an effect of "Town and Country" to the exterior, was to avoid "the cold, unwelcoming formality often expressed by limestone and marble."

The plan below the general view of the first floor, from a point just beyond the street entrance, does not indicate the second-floor departments: (in order behind the big upstairs window) Bridal Salon; "Bras"; Corsets.

Ben Schnall Photos

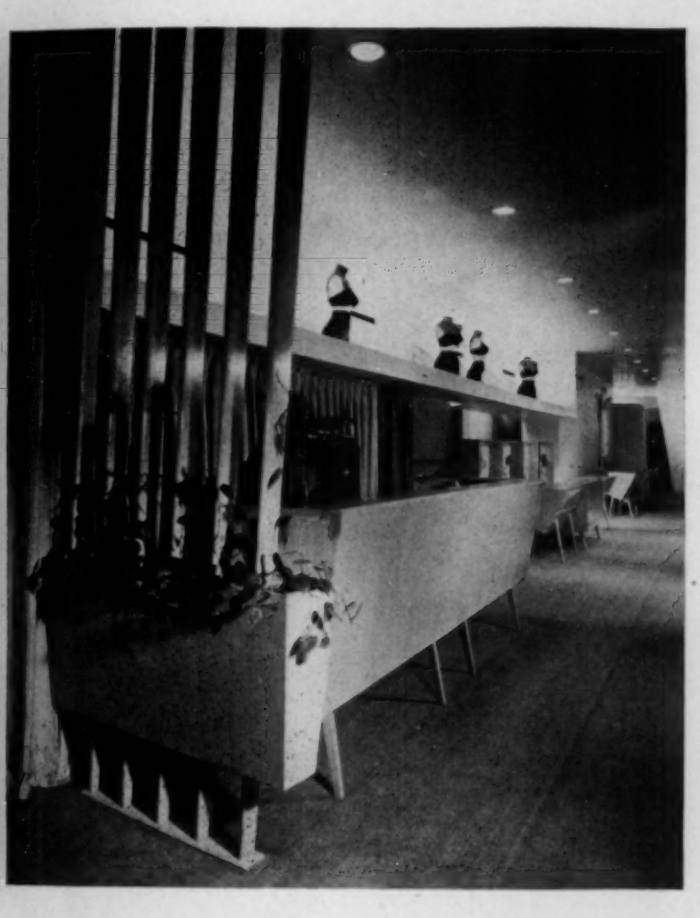


Above: "boudoir atmosphere" of first floor is contributed to by straight-grain oak with light pickled finish. All woodwork and cases are intended to suggest actual boudoir furnishings. Walls are chartreuse, turquoise, fuchsia; ceiling, gray orchid. Cove interiors light orchid



FIRST FLOOR

Above: south wall, lower floor, looking toward street. Fluorescent lighting is used only in coves where source is concealed; recessed ceiling fixtures, general and spot, are incandescent



Above (top): general view of upstairs from point opposite stairway. Directly above: cashier and wrapping station at a point before "Bra" Department and just after Bridal Salon; note camouflage of cash register by the flower box and trellis

Right: north wall, lower floor, looking toward rear of store from just beyond stairway. Combined lighting is designed to give average reading of 28 lumens on active selling plane, at show case level; in aisles and non-selling areas, it is less. "Bullet-type" spotlights dramatize special displays on "A-B-C" platforms

OPEN-FRONT PHOTO SHOP IN BERKELEY, CALIFORNIA

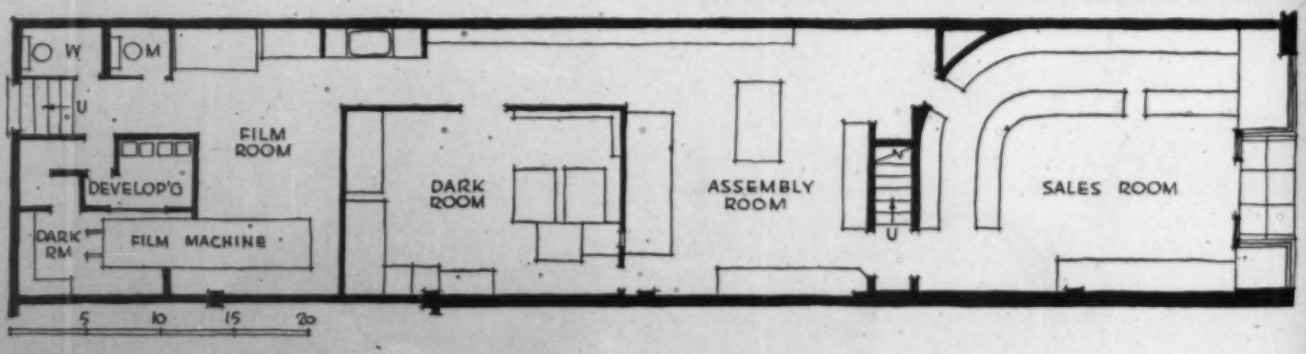
John Carl Warnecke, Architect

Philip Fein Photos

THIS young architect (age 27) makes his wholly visible sales interior of continuous part with the outside, by keying wood finishes to the color of the structural glass used as exterior facing. Counter fronts, storage fixtures, and wall coverings are Philippine mahogany, bleached white, then finished in a silver gray.

Counter tops are accents of bright blue structural glass. The ceiling is white acoustical tile with flush fluorescent lighting fixtures. Cabinets and show cases are lighted indirectly by fluorescent.

The Berkeley Photo Co. is located near the Sather Gate entrance to the University of California.



HOTEL FIRE SAFETY

ANOTHER hotel fire! Another holocaust in a "fireproof" hotel! Why? What can be done to prevent this needless loss of life? What is the architect's responsibility — moral, as well as legal?

In six short months two large hotels, the Winecoff in Atlanta and the LaSalle in Chicago, were turned into lethal gas chambers and crematoria, although both bore that mocking title, "fireproof." Another, the Canfield Hotel in Dubuque, Iowa, demonstrated the danger of unprotected combustible construction.

The public was particularly appalled because the Winecoff and LaSalle hotels, in which 180 persons died, were thought of as fireproof hotels. The layman naturally, but mistakenly, believed that a hotel of "fireproof construction" was, for that reason alone, a "fire safe" hotel.

The term "fireproof construction" according to the National Board of Fire Underwriters indicates only that the framework will be capable of being rehabilitated and continued in use, even though the contents of a building are completely destroyed. And "contents" includes occupants.

Most fatal hotel fires occur in comparatively old buildings. It would be wise if, at the outset, every existing hotel were examined by local architects and immediate practical recommendations for increasing fire safety were made, whether or not the law requires changes. The principles of fire safety and the means to be employed are the same for new or old hotels. To understand these principles and the means for control, it is necessary to understand what happens in hotel fires — where and why they start, how they spread, and what people do. For that reason we give accounts of recent fires as they relate to the recommendations for action that will increase fire safety.

***Fire safety** depends not only upon fireproof construction of the shell (walls, floors, partitions, etc.) but also upon other means of (1) fire prevention; (2) fire control, fire isolation, preventing the spread of fire once it starts; and (3) providing adequate means of escape for the occupants.*

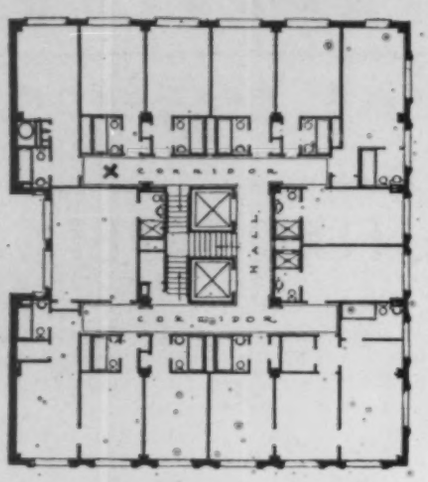
The architect's responsibility in remodeling or in designing new hotels extends beyond mere compliance with existing building laws. They often are inadequate for true fire safety, although new standard codes are being developed. His plan, his design, his choice of materials and equipment, his supervision — all must take into account the three factors of fire safety.

Press Association Photo

119 persons died in the Winecoff Hotel, Atlanta. Erected in 1913 of fireproof construction, it had only a single exit stairway, open and unprotected from the flames that roared upwards from the point of fire's origin in the third floor corridor. Combustible trim and furnishings fed the flames, and open transoms turned guest rooms into fire traps

FIRE PREVENTION

This is largely a matter of materials used. In addition to the usual legal requirement for fireproof structure, it is essential that all possible finish ma-



Plan of the third floor of the Winecoff shows the open stairway. Fire walls and doors of the elevator shaft withstood the flames. Fire is believed to have started at point X in a carelessly stored mattress

terials, equipment, and furnishings be as fireproof, as incombustible, as possible.

Interior Finish. There is great danger in permitting the widespread use of combustible trim, paneling, and furnishings in a hotel. Important factors in each of the recent hotel fires was the presence of trim and wall and floor finish materials that ignited readily and spread the fire.

The cocktail lounge of the LaSalle Hotel, where fire started, was a room within a room, constructed of wood studs with gypsum block filler, covered with a highly combustible interior finish. The fire started in the concealed space behind the false wall and spread rapidly through the cocktail lounge and through the unprotected opening into the main lobby. Here it also found ready fuel: the entire lobby and mezzanine were finished with ornate paneling of walnut veneer that burned like tinder.

Heat caused the dried-out highly varnished veneer on the panel to delaminate and burn at a much lower temperature than if ordinary wood had been involved. Underwriters' Laboratory tests on representative samples of the paneling indicate that the surface spread of fire was approximately five times faster than on red oak lumber.

Combustible finish also was a highly contributory factor to the rapid spread of fire in the Hotel Winecoff and Hotel Canfield.

In the Winecoff, walls of corridors and stairways were covered with painted burlap from the wood baseboard to the rail, above which they were papered. The corridor floors were completely covered with carpet on felt padding. The doors to guest rooms were of light panel wood, with wood frames and transoms. Interior finish generally consisted of wallpaper and painted ceilings: some rooms were reported to have up to five thicknesses of wallpaper. Most windows had ordinary cloth draperies and a number were equipped with wooden venetian blinds.

In the Canfield Hotel there had been extensive modernization of the interior with combustible board glued to $\frac{3}{8}$-in. plaster board which in turn was nailed to suspended two-by-fours. Fire started in a closet in the cocktail lounge where ashtrays were emptied into a cardboard container. As in the LaSalle, it flared quickly through the cocktail lounge, then into the lobby, and up the unprotected stairs and elevator shaft.

The National Fire Protection Association recommends that, since oil bonded paints on walls and ceiling provide much fuel to fires, all ceilings of public area, including assembly rooms, stairwells and corridors, be coated with incombustible types of paints. Reference is made to Navy Specification 52-P-22. It also advises that in all stairways the use of wood paneling, flammable paints, and carpet runners that are not flameproofed be forbidden.

Sprinkler Protection. Certain hotel elements offer unusual hazards to fire prevention, and should be provided with sprinkler protection. Areas where many fires originate include the kitchen, bakery, laundry, valet shop, linen room, repair shop, storerooms, paint shop, carpenter shop, and help's quarters. See table listing locations of all reported fires in hotels, page 109. Service areas should be isolated, wherever possible, and separated from the rest of the structure by fire walls.

The Winecoff fire is believed to have been started through the careless storage of a mattress and folding bed in the

Left: Lobby and mezzanine of Hotel LaSalle were finished with walnut veneer paneling that delaminated and burned fiercely. Fire started in the adjoining cocktail lounge, also finished with combustible material. Right: False wall above elevator door lintels buckled and opened shafts to the flames. An open stairway (not shown) permitted fire and strangling smoke to penetrate quickly to the upper floors

Press Association Photo

hotel corridor, where it was exposed to any carelessly discarded cigarette.

The careless smoker will always remain the number one cause of hotel fires (approximately 38 per cent), and a hazard beyond the architect's control. Fires will start in this manner, but by keeping combustible furnishings to a minimum, providing sprinkler protection, and preventing the spread of fire by the compartmentation of hotel areas, fires can usually be isolated and checked at their source.

For fire prevention, *therefore, starve or kill fires at the outset. Specify fire-resistive interior finish, flameproofed furnishings, incombustible paints.*

FIRE CONTROL

Control is accomplished by three means: (1) fire isolation, (2) directed venting, and (3) quick extinguishing provisions, including fire detection and alarm systems.

Isolation. By sealing off the hotel areas into a series of vertical and horizontal "locks" protected by fire barriers, the architect can achieve a maximum of fire safety. Once a fire gains initial headway, it sets up a tremendous upward and outward pressure, fresh air being drawn in at the base and flames, smoke, and heated gases spreading upward through every unprotected opening and mushrooming horizontally when its upward travel is blocked.

Horizontal Isolation. To combat the horizontal spread of fire within a single story, self-closing fire doors should be included in long corridors, doors to rooms should be of heavy construction, and transoms should be eliminated.

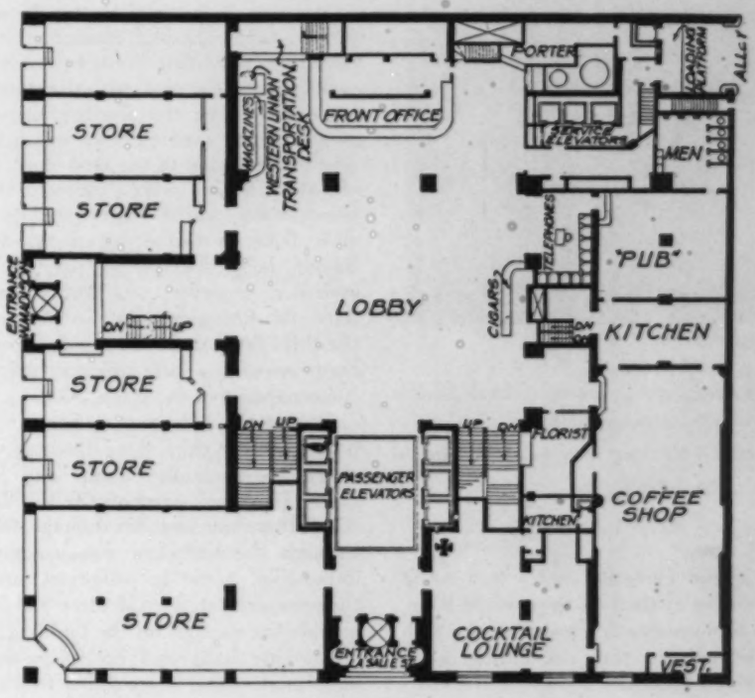
In none of the hotels under study were there any of these barriers to the horizontal spread of fire.

Vertical Shafts and Stairs. For safety, all floor openings, such as stair, elevator and dumbwaiter shafts, laundry chutes and similar vertical openings must be continuously enclosed with fireproof walls or partitions on all stories, and should have approved fire doors at all openings. Vertical pipe, ducts, or chases should be fire-stopped at floor and ceiling lines; and heating and ventilating ducts serving more than a single story must be provided with automatic dampers on all outlet openings and branches.

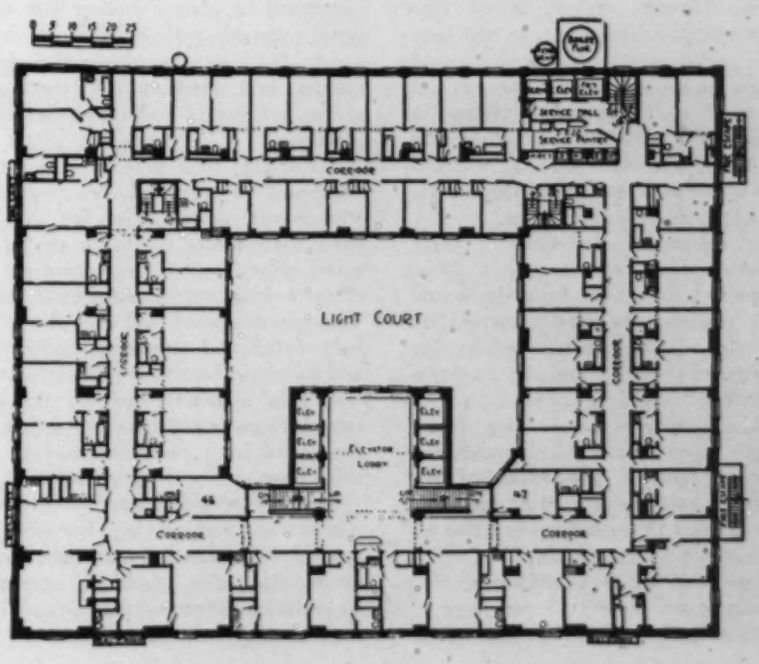
Unprotected vertical openings were the chief cause of the rapid spread of fire in each of the recent disasters. Despite the fireproof structure of the Winecoff and LaSalle, the flames and death-dealing smoke and gases sprouted upward like a deadly plant, seeking every opening such as open stairways and shafts, pouring through open transoms into rooms and across to open windows.

In the LaSalle there was the additional invitation to danger in the openings into the elevator shaft. False walls above the lintels of the passenger elevator door in the lobby quickly burned out and revealed openings where masonry had been omitted. In addition there was later discovered a 3 ft. by 3 ft. opening in the rear of the elevator shaft leading to the concealed space behind the walls of the cocktail lounge, which had been broken through for ventilating purposes.

The main passage for flames, heat, and smoke that caused death on the upper floors was the open stairway, however. Some investigators believe



Above: Ground floor plan of Hotel LaSalle. Fire started at point X, spread throughout cocktail lounge, then through unprotected door into lobby and up the open stairs and pierced elevator shafts. Below: Plan of an upper floor. None of the fire stairs at rear opened directly to the outside at ground floor level. Propped-open fire doors admitted smoke and gases. Most who escaped made their way down the exterior fire escapes



Press Association Photo

Combustible construction and interior finish fed the fire that swept Hotel Canfield, assisted by an open stairway. This view shows three floors gutted by flames

that if the elevator shafts had been self-venting at the top, they would have acted as chimneys to draw off smoke and superheated air, thus preventing most of the mushrooming effect of the fire. See page 110. In this way, once the effectiveness of a shaft or stairway has been destroyed as a means of escape (because of fire or smoke) it will, if vented, release dangerous pressures confined in it and protect unaffected areas from the horizontal spread of fire.

Instead, the flames roared up the open stairway in the LaSalle as high as the fifth floor and into corridors before the fire was brought under control. Hot smoke and gases driven up by the heat below, and drawn by the draft created by open guest room doors, transoms and open windows, caught many victims in the halls, where they were overcome and died. Those who managed to save themselves made their way down the outside fire escapes and rear stairways.

The report of the Cook County Inspection Bureau states that "Few persons lost their lives from the actual flames. Death was mostly caused by inhalation of gases distributed by the unprotected stairways and pierced elevator shaft openings.

"In many cases gases were drawn through open transoms. Unprotected stairways reduced the value of the emergency exits by permitting spread of fire and gases through corridors so rapidly that escape was cut off."

A report on the Winecoff fire pointed to similar conditions:

"The major contributing cause of the tragedy was the open, unprotected stairway, which furnished a perfect channel for providing draft and extension of flame, heat, and gases. Another factor was the opened transoms, and doors as tenants attempted to flee rooms, also the open windows."

Main floor openings in the Winecoff formed a central group, consisting of two elevators, extending from basement to penthouse on the roof, with the stairway located between the shafts. Stairs led to a half-way landing from which they rose on each side to the next floor. The elevator shafts were enclosed with fire-resistive walls, with openings on each floor protected by metal doors having large wired-glass panels. The stairway, however, was not enclosed. After the fire started in the hallway of the third floor, it spread rapidly upward by means of this open stairway, trapping the occupants of the upper floors.

During the holocaust, stairways and halls from the third floor upwards were charged with smoke, flame, and toxic gases. Therefore, even on the top floors where there was least fire damage, travel through the hallways was practically impossible. Some investigators are of the opinion that, even if there had been outside fire escapes on the building, the impassable halls and corridors would have made them inaccessible to all except those in the nearest rooms.

Evidences of extreme heat in excess of 1,500° F. were found in many Winecoff rooms. Electric light bulbs were fused and melted down; porcelain bowls were cracked; the heavy metal doors on elevators were twisted; telephones were melted down; nothing but bedsprings remained of some room furnishings; wood doors and trim were completely consumed in places; hollow tile walls were exposed and cracked in some places; fire hose was consumed down to nozzles and fittings; and there was severe spalling of walls and flaking of plaster.

All of this took place in a so-called "fireproof" hotel — believed to be still structurally sound! The fire did not enter the elevator shafts (or any of the small pipe shafts) even though the elevator doors were buckled by the heat. This appears proof that such shafts can be isolated and protected against fire and its vertical extension. Had the stairway been similarly enclosed and protected, there seems little doubt that the fire could have been confined to the third floor.

Mechanical Aids. In addition to horizontal and vertical fire barriers, the control of fire also depends upon certain fire-fighting aids, such as automatic sprinkler and alarm systems, standpipes, fire hose, and extinguishers.

Sprinklers. Sprinkler systems are of particular value in existing hotels, where high standards of fire safety might not be achieved except through almost complete remodeling and new construction. Had the cocktail lounge of the LaSalle Hotel and the third floor corridor in the Winecoff Hotel been provided with automatic sprinkler protection, it is believed that neither fire could have gained headway at the outset.

Alarm Systems. Early discovery of a fire and prompt alarm are of utmost importance. Every hotel should have a local alarm system with signaling stations on all floors, arranged to transmit an alarm to the telephone switchboard and to the offices of the engineer and employee in charge of the fire brigade. A city fire alarm box should also be provided on the outside of the hotel at a readily accessible point.

Irrespective of the class of hotel, dependence upon the telephone as a means of giving the alarm to guests is apt to result in serious delay. The automatic sprinkler system can be so mechanically or electrically equipped as to transmit an automatic alarm immediately upon the fusing of the sprinkler head; or an independent alarm system can be provided. It has been suggested by some authorities that a public address system might be connected with each guest room.

Standpipes. The inside standpipe is important in any scheme of hotel protection. For the small building of moderate height, the National Board of Fire Underwriters states that 2-in. standpipes may be sufficient for "first-aid" requirements; otherwise there should be a larger line, 4 to 6 in. in diam., equipped for use of both small hose and 2½-in. fire department hose. Standpipe should extend from basement to roof and be connected to a street main or suitable pressure or gravity tank. It should have a gated 2½-in. hose connection, reduced down to 1½-in., not over 5 ft. above the floor on each story, including basement, attic, and roof. Hose sufficient to reach all parts of the fire section, but preferably not in excess of 75 ft. should be attached to each outlet. In addition, portable hand extinguishers should be provided at all strategic points.

Automatic Vents. To prevent the accumulation of inflammable gases under skylights or in attics which are relatively inaccessible, it is recommended that automatic venting devices be installed, which will open when dangerous pressures or temperatures are reached. Failing this, skylights should be glazed with thin glass that will break under pressure, though in this case a metal screen must be provided beneath the

glass to prevent the entrance of sparks or flying embers from an exposure fire.

Fire control, *to sum up, involves (1) so planning the hotel as to provide for the localization of the fire by isolating areas with firewalls and fireproof self-closing doors; (2) fire stairs and fire towers; (3) automatic venting of all vertical shafts once they have become useless as escape means; (4) automatic sprinklers in all major-hazard locations; (5) adequate standpipes, and convenient hose to reach the entire interior; (6) portable extinguishers at strategic points; (7) providing detection and alarm systems; and (8) (not within the province of the architect) employee and personnel training and drill in immediate emergency action, plus rigid inspection and alert maintenance.*

ESCAPE

Warning fire alarms are necessary but must be subject to control by management to prevent panic. Fire towers, fire stairs, and fire escapes must be constructed according to modern standards, offering alternate means of escape to every occupant of the hotel, and terminating with direct egress from the building. Lights in corridors indicating exits and fire stairs should be placed flush with wall or door jambs *near floor level* (to prevent obscuring by smoke) as well as above exits. Directness and simplicity in the plan of the hotel make for natural choice and use of exits and prevent confusion which leads to panic.

All recommendations and modern laws relating to hotel fire safety now call for at least two safe, readily accessible exits from every corridor, public space or service area. These were shockingly absent at the Winecoff. There, the single open stairway was sole means of escape from upper floors. While the exits in the LaSalle were sufficient in number, certain conditions nullified much of their effectiveness. None of the fire stairs opened directly to the outside at the ground floor level. At the time of the fire a door leading to the enclosed stairway near the service elevators at the mezzanine floor had been left open, and this stair, which offered nearest egress from the building at the first floor, could not be used because of the smoke and gas pouring through it and up the stairs.

A deterrent to the proper location of hotel exits is their possible use as a means of evading hotel bills. Also as invitations to intruders with criminal intent. Therefore most stairways lead into the lobby. Where this is necessary, special provision must be made to make this area as nearly fireproof as possible, with a minimum of combustible trim and decoration, free from obstacles, and with several nearby points of exit to the outside.

It is of utmost importance that the doors to escape stairs be self-closing and that they never be permitted to be propped open for ventilation or any other reason. Occupants must also be impressed with the necessity of allowing the doors to close behind them after passing through, since, once they are left open to admit smoke and fire, their usefulness to those above ceases.

It is interesting to note that the original plans for the LaSalle Hotel called for fire doors in corridors, but they were later deleted. Had they existed, guests could have gone from danger areas to a safer zone on the same floor protected by fire doors.

Fire Escapes. Outside fire escapes have their place in the general scheme of hotel fire protection, especially in old hotels. Hundreds escaped from the LaSalle by outside escapes. They are far less satisfactory than enclosed fire stairs, however, since they must be located in such a way that they avoid passing in front of windows unprotected by wired glass. Otherwise fire in a lower story might make them unusable. They are objectionable, too, as possible means for theft or invasion of privacy.

References: National Board of Fire Underwriters; National Fire Protection Association; Cook County Inspection Bureau; and Fire Engineering

POINT OF ORIGIN OF HOTEL FIRES, 1930–1940*

	Number	Per Cent
Guest rooms	93	20.6
Unknown	58	12.9
Basement locations not otherwise listed	44	9.8
Kitchens and kitchenettes	37	8.2
Stairwell, elevator shafts, waste chutes, linen chutes, etc.	27	6.0
Storerooms	26	5.8
Boiler room	25	5.5
Stores and shops	23	5.2
Clothes and service closets	18	3.9
Lounges and lobbies	13	2.9
Miscellaneous known locations	13	2.9
Attic or roof space	12	2.7
Roof or penthouse	10	2.2
Employees' quarters	9	2.0
Restaurants	9	2.0
Hallway or corridor	9	2.0
Dining room	4	0.9
Outbuildings	4	0.9
Outside or exposure	3	0.6
Ballroom	3	0.7
Laundry	3	0.7
Radio stations	2	0.4
Air conditioning units	2	0.4
Incinerator or rubbish room	2	0.4
Stairway	2	0.4
TOTAL	451	100.0

*National Board of Fire Underwriters

Note. **The foregoing article, concerned with the elements of fire safety as shown necessary by recent fires, is intended to supplement local codes which give specific and sometimes exhaustive legal provisions for materials, dimensions, tests and applications that demand conformance or revision. The following article sets forth the conclusions drawn by an investigator after careful analysis of recent hotel disasters.**

PREVENTING THE SPREAD OF FIRE

By Maurice Webster *

INVESTIGATION of the General Clark Hotel fire (15 per cent of occupancy killed), the LaSalle Hotel fire (6 per cent of occupancy killed), and studies of other fires leads me to believe that the question of proper venting to prevent the spread of fire has been grossly neglected.

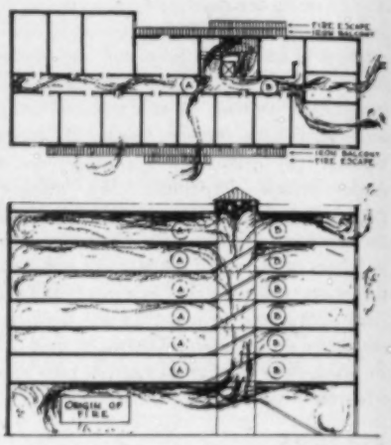
In the General Clark fire there was a 10 ft. square skylight directly above the stairwell, glazed with wire glass. This glass did not let go for some time after the fire had become intense — not until the glass had melted. It could be seen after the fire dripping like icicles from the reinforcing wire. In my opinion, if this skylight had been plain glass, of large enough coefficient of expansion to break quickly, most if not all lives would have been saved. Instead, wherever a bedroom door and window were opened, a vent through the bedroom was thus formed, and flames cut a path like that of a blowtorch from corridor across the room and out the window, enveloping the fire escape.

Firemen testified that the outward pressure from gases of combustion seemed like a hurricane when they tried to enter the front door. Such pressures would not have existed if the skylight had let go. The reverse condition was noted by firemen when they arrived at the LaSalle fire after about 180 sq. ft. of glass had broken out in stairwells and elevator shaft. If this feature (venting) had been combined with self-closing doors, of even ½ hour rating, across corridors at "A" and "B" in diagram, all guests would have been safe.

The advantages of venting stairwells and elevator shafts lie in giving a great measure of safety for a relatively small expenditure of money and in their applicability to many existing buildings, with only moderate structural change. Automatic doors across corridors are also relatively cheap and are applicable to old buildings, thus giving the safety of horizontal exits as well as "cellizing" the buildings.

In the Canfield Hotel fire, survivors reported that the pressure from the corridor was "terrific" when they opened bedroom doors. These corridors were not vented, and bedroom windows became horizontal vents for smoke and flames when doors or transoms were left open.

In the LaSalle Hotel, it appears that full venting action through breaking out of glass did not occur until about five minutes after the blaze had started up the stairwell. Flame and carbon monoxide entered all bedrooms in which deaths occurred from corridors and not from the court. Most deaths occurred in bedrooms where transoms were found open. Conditions were most fatal in court bedrooms where the rising column of heated air caused a suction augmenting the movement of gas from corridors through bedrooms.



In General Clark Hotel fire, unvented shaft hastened the spread of smoke and flames

A good system of venting might well consist of moderately sized vents spaced at intervals along corridors. If intakes to these vents were equipped with balanced doors operating like typical draft regulators in breechings, they could be so adjusted as to automatically give protection for any floor where fire might occur, without danger of spreading fire through flues to other floors.

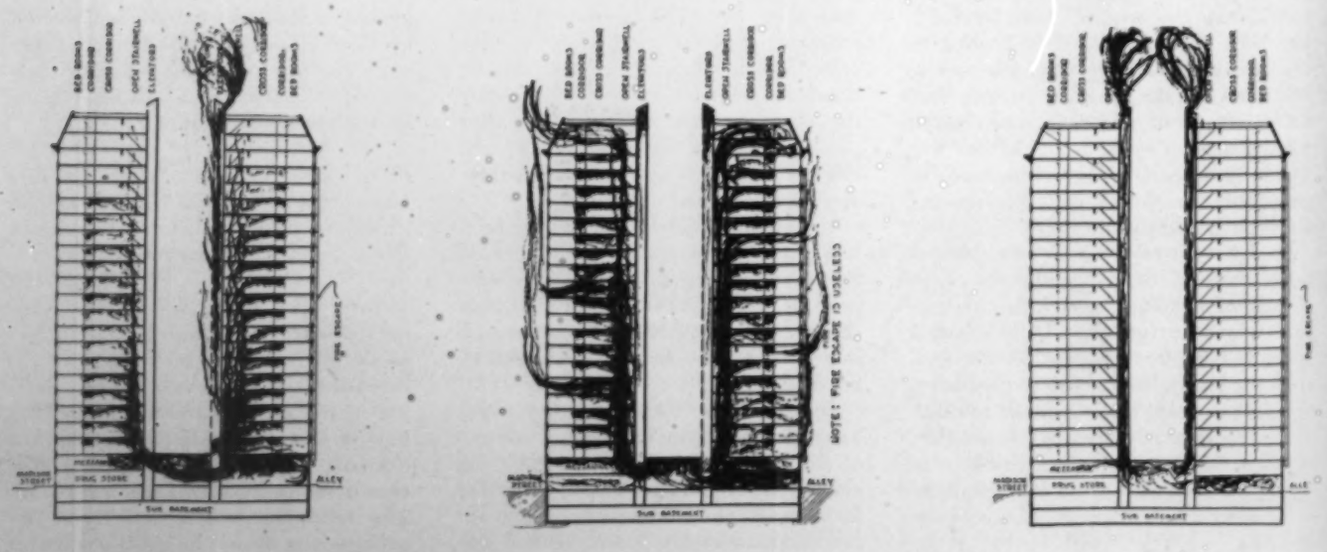
It seems strange that with the National Underwriters Code, the National Safety Code, and the Consolidated Pacific Code all recommending the principle of venting stairwells and elevator shafts, so many municipal and state codes actually forbid this practice.

* *Architect, Member of Investigating Jury appointed by Coroner of Cook County, Ill., to investigate LaSalle Hotel fire.*

What happened where broken windows in shafts served as vents

What might have happened if windows in shafts had not broken out

What might have happened with proper vents at the top of shafts



SCHEMATIC SECTION THROUGH HOTEL LASALLE

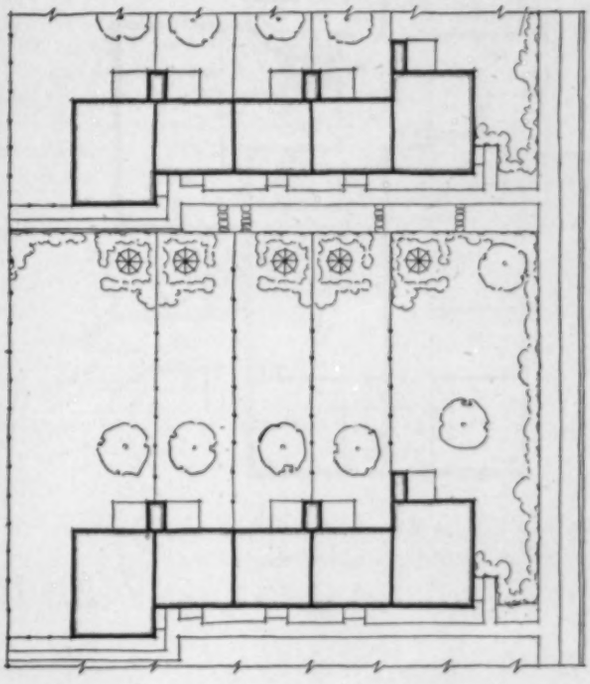
FHA APARTMENT PLAN TYPES

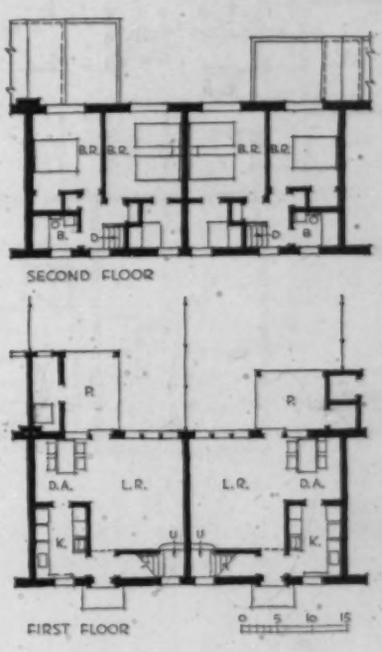
NEW VERSION OF ROW HOUSES

Something better than the old and all too familiar plan of block row houses is suggested by the Federal Housing Administration. Groups of houses are set at right angles to the street, instead of being cramped into narrow plots facing the street.

An obvious advantage is the wider, more comfortable house proportion which permits better planning, and at no loss in occupancy when end houses are enlarged to accommodate two families, as shown in this plot plan. Lots run parallel to the street (indicated at the right) and are reached by walks bordered with planting.

Principal rooms and porch are placed at the rear of the house, overlooking a garden — it can't be a "back yard." Only kitchen, stairway, and bathroom windows face the adjoining plot. Floor plans for two of the single-family units are shown at the right.

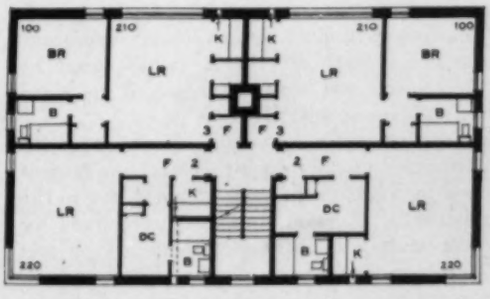




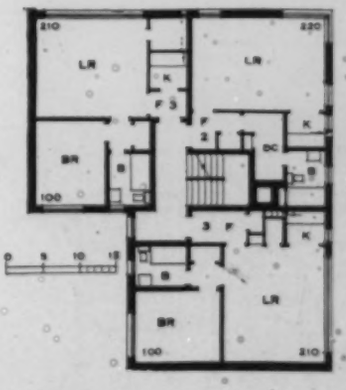
APARTMENT PLANS FOR VARIOUS PLOT SIZES

The following plans for multiple housing will be published soon by FHA* to show certain federal standards for rental housing, including room count and acceptable room sizes. The numbers in foyers indicate permissible room count. Those in rooms indicate their square foot areas.

These plans, of course, serve only to show suggested arrangements for the use of architects. Naturally, no plan is applicable to all conditions and locations, for,



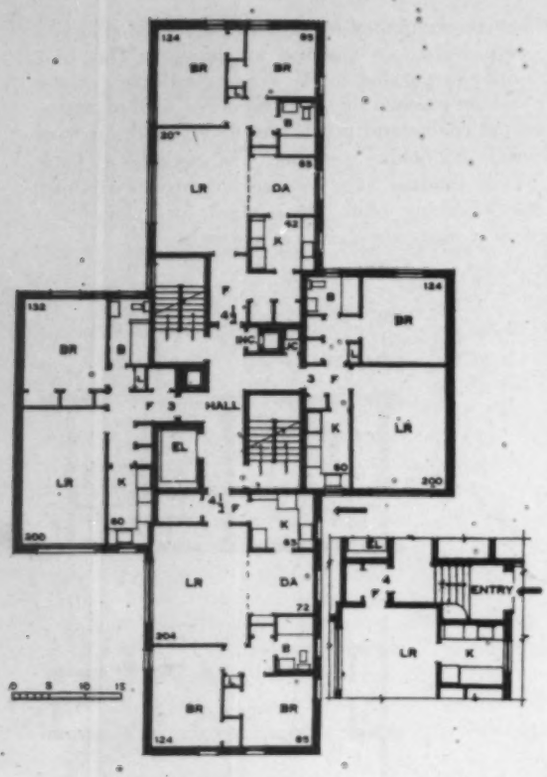
75-ft. lot. Walk-up building, with efficiency apartments. 4 apartments and 10 rooms per floor



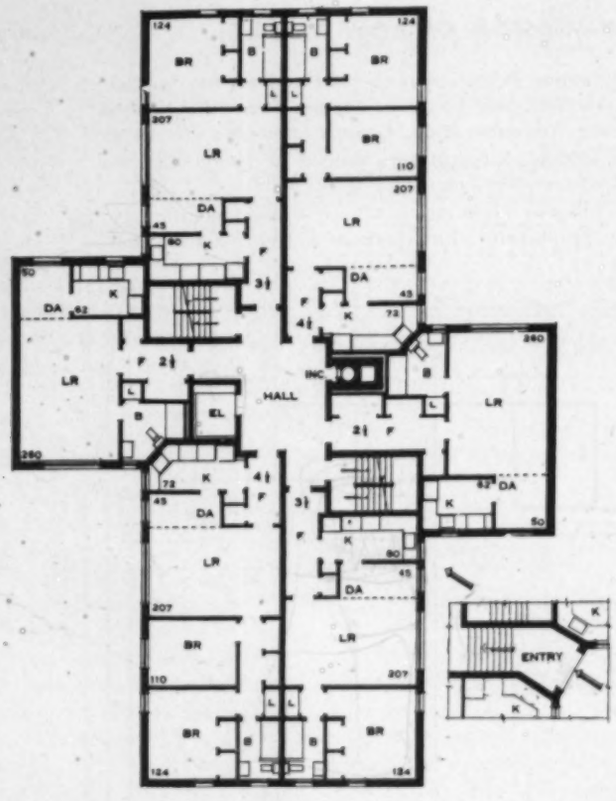
Walk-up unit, with efficiency apartments. 3 apartments and 8 rooms per floor

* Under the title of "Planning Rental Housing Projects."

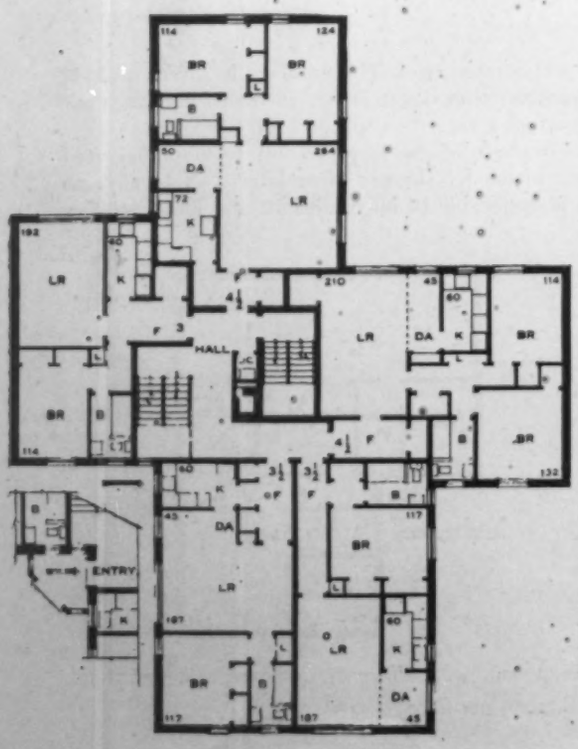
FHA APARTMENT PLAN TYPES (*Continued from page 111*)



(Above) 60-ft. lot. Elevator building. 4 apartments and 15 rooms per floor (14½ on first floor)



(Above) 75-ft. lot. Elevator building. 6 apartments and 22 rooms per floor (21½ on first floor)



(Left) 75-ft. lot. Walk-up building. 5 apartments and 19 rooms per floor (18½ on first floor). Front apartments show two solutions — one giving preferential treatment to the bedroom; the other, to the living room and dining alcove

as FHA points out, apartment buildings of these types and arrangements are limited by conditions on adjacent properties and by depth of property which must be sufficient for yards and setbacks required by deed restrictions, ordinances, and FHA.

The percentage of efficiency units (apartments with minimum kitchenettes and dressing closets) in a project is determined by FHA on the basis of suitability to the local rental market. Certain specific requirements for these efficiency units are: entrance through a foyer and access to bathroom from foyer, dressing closet or hall; minimum living-room and bedroom areas as shown; kitchenettes not less than 3 ft. by 5 ft., opening off living room or foyer, with a tenant-operated exhaust fan; dressing closet large enough for dresser, circulation, and storage, including approximately 6 linear feet of rod and shelf space.

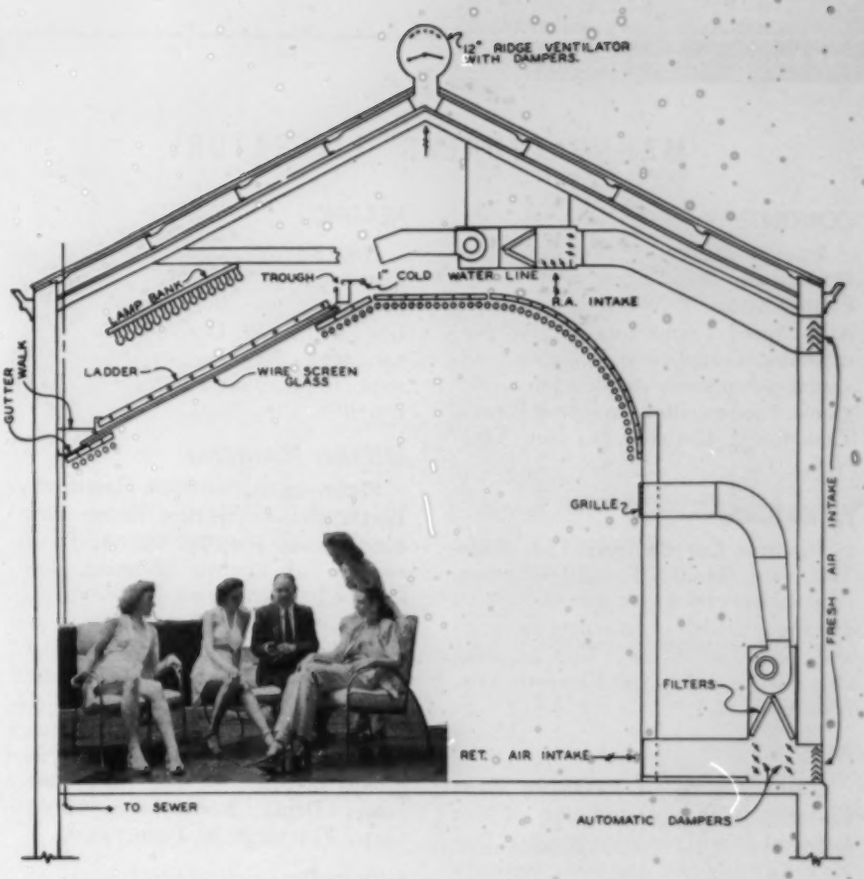
(*Continued on page 117*)

MOVE THE SUN INDOORS

An experimental sunshine room has been built by General Electric Company to demonstrate the possibilities of artificial sunshine solariums * for convalescent hospitals, athletic clubs, and progressive industrial plants in the northern part of the country, and with slight modifications to plant growth research and materials testing. The lighting setup shown in the sketch of the experimental solarium was designed to produce a perceptible sunburn in the same time as does the sun, to provide high levels of light, and as nearly as possible the same infrared radiant energy as the sun.

Tungsten spotlight lamps and A-H9 mercury lamps are installed above the glass skylight over which flows a film of water to filter out much of the long-wave infrared energy. The balance of the ceiling contains 40-watt fluorescent sunlamps and regular 40-watt white fluorescent lamps. A ventilating system keeps the air temperature down to a comfortable 80° F. Results are said to be a reasonable approximation of summer sunlight. Skin appears quite as it does in sunshine, and room occupants agree that it "feels" like sunshine.

* *An Artificial Sunshine Solarium," by G. F. Prideaux, Illuminating Engineering, Nov., 1946.*



Artificial solarium tests "sunshine" substitutes in experiments for northern climes

PRODUCTS for Better Building

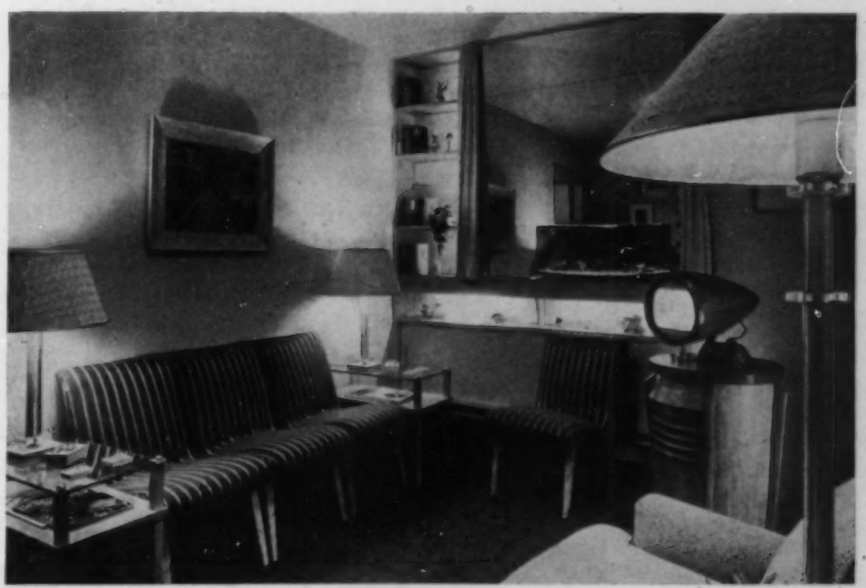
HOME LIGHTING

A restyled Lighting Center has been opened in New York City by Sylvania Electric Products Company to display latest techniques in home lighting and to serve as a proving ground for new lighting equipment. The redecorated rooms, first opened in 1944, incorporate black light, germicidal light and infrared heat lamps, as well as new adaptations of both tubular and circular fluorescent lighting combined with the latest in incandescent floor and table lamps. The basic idea of the lighting scheme throughout the five rooms — living room, bedroom-den, kitchen, bathroom, and study — is "to make light itself an integral part of the decorations."

The fundamental lighting unit is a simple fluorescent lighting strip, with self-contained ballast, which is placed in book cases, kitchen cabinets, direct and indirect coves and in valences. The floor lamp is still considered essential for close visual tasks, and an attempt is made to coordinate recessed fluorescent tubes with the latest types of portable lamps. Emphasis is also placed upon the fact that fluorescent and incandescent sources can be blended successfully.

Illustrated is the living room, focal point of which is a television set. An illuminated fish tank is set into a large mirror placed along one wall for decorative effect and to provide a low brightness background for watching the television screen. Window valence and book

(*Continued on page 122*)



Television-living room shows new techniques in fluorescent and incandescent lighting

MANUFACTURERS' LITERATURE

CONCRETE FORMS

Steel Forms for Concrete Walls and Floors, and **Steel Forms for House Foundations.** Two folders describing Atlas Speed Forms for concrete construction. Complete specifications, advantages claimed, applications, diagrams. 4 pp. ea., illus. Irvington Form & Tank Corp., 43 Cedar St., New York, N.Y.

ELEVATORS

Elevator Car Designs 154, 156–162, and **Geared Freight Elevator.** Nine folders giving complete description of various models of passenger elevators and one freight elevator. 4 pp. ea., illus. Otis Elevator Co., 260 Eleventh Ave., New York, N.Y.*

FANS

Durco Corrosion Resisting Fans (Bulletin 1102). Description of five standard sizes of corrosion-resistant fans for exhausting acid and other corrosive fumes. Complete engineering data including dimensions and capacities; typical applications; information on the type of drives used, hood outlets, bell end adapters and drip traps. 12 pp., illus. The Duriron Co., Inc., Dayton, Ohio.*

Emerson Electric Exhaust Fans for Business and Industry (Catalog X5559). Details of design and construction, specifications and performance data for direct-drive and belt-drive exhaust fans and accessories for commercial and industrial use. Typical uses and installations, table of recommended air changes for various rooms. 16 pp., illus. The Emerson Electric Mfg. Co., St. Louis 21, Mo.*

FIRE HOSE

Firemen Can Work Faster With B.F. Goodrich Hose. Folder describing a canvas-jacketed, flexible fire hose, its features and record. Includes description of couplings, gaskets and other accessories. 6 pp., illus. The B. F. Goodrich Co., Akron, Ohio.*

FURNACE

Mor-Sun Utility Model U-4-G Pressed Steel Gas Fired Forced Warm Air Furnaces. Bulletin describing a new unit designed for the small home. Gives features, complete specifications. 2 pp., illus. Morrison Steel Products, Inc., 601 Amherst St., Buffalo 7, N.Y.

* Other product information in Sweet's File, 1946.

HEATING

Heat Recovery from Internal Combustion Engines. Bulletin on the Sims Heat Exchanger and the Sims Exhaust Gas Fired Boiler. Description, specification tables, features, typical installations. 16 pp., illus. The Sims Co., P. O. Box 1096, Erie, Penn.

KITCHEN PLANNING

Planning the Kitchen Electrically: Westinghouse Electric Home Planning Series Manual No. 1. Fundamentals of kitchen planning, basic kitchen layouts, design details, lighting, outlets, equipment. Application to four types of home — "thrift," "budget," "ideal," and "de luxe." Details include dimensions of typical equipment. Table shows relative amount of storage space and counter surface in each of the four groups of plans. 74 pp., illus. Better homes Dept., Westinghouse Electric Corp., Pittsburgh 30, Penn.* *$1.00.*

LAUNDRIES

Does Your Home Have a Place for Living? Eleven plans for electric "dual-purpose" laundries, so arranged as to permit their use for varying other family activities. Novel ideas include use of the breezeway for the laundry, use of the laundry as a maid's or guest room. 24 pp., illus. Home Laundry Equipment Division, General Electric Co., Bridgeport, Conn.* *10 cents.*

LIGHTING

A Better Kind of Lighting (Bulletin 101). Nine types of Lustra Reflector Lamps for industrial, commercial, store, theater and display lighting. Included are neck-silvered directs and concentrators, side-silvered tubulars, and various floodlights, spotlights, etc. Construction details, sizes, recommended uses. 4 pp., illus. Lustra Corp. of America, 40 W. 25th St., New York 10, N.Y.

Specify Colovolt Cold Cathode-Low Voltage Lighting (Catalog S-47). Complete mounting dimensions for four types of Colovolt commercial and industrial fixtures, and description of each. Tables to determine footcandles required for a given room. 4 pp., illus. General Luminescent Corp., 732 S. Federal St., Chicago 5, Ill.

METALS

Reynolds Aluminum Alloys and Mill Products Data Book. Description of aluminum alloys and aluminum mill products made by Reynolds. Range of sizes, chemical compositions, yield and ultimate strengths, hardnesses, tolerances, etc.; manufacturing methods; section of reference tables and related specifications. 248 pp., illus. Reynolds Metals Co., Inc., Louisville 1, Ky.* *$2.00.*

PARTITIONS

The New Gold Bond Hollow Wall System. Booklet describing a new system using two free standing partitions to house plumbing, wiring and ducts, to deaden transmission of sound, and to give a higher fire-rating than the standard requirement. Gives comparison of sound insulation value with other types of walls. Recommended specifications. Section of detailed architectural drawings, readily traceable into plans. 10 pp., illus. National Gypsum Co., Buffalo 2, N. Y.*

PIPES

Branch Pipe Outlets with Bonney WeldOlet Fittings. Catalog giving complete application information, structural data, installation procedure, temperature-pressure rating charts, specifications and list prices of fittings for making full pipe strength branch pipe outlets. Also illustrates and describes drain out fittings and complete line of flanges. 18 pp., illus. Bonney Forge & Tool Works, Allentown, Penn.

Pipe in American Life. Booklet presenting historical background and modern uses of metal pipe, with emphasis on the use of steel pipe. Separate chapters deal with the uses of steel pipe in homes, large buildings, process industries, railroads, shipping, water supply systems, etc. 48 pp., illus. American Iron and Steel Institute, 350 Fifth Ave., New York 1, N.Y.

PLASTICS

Tenite Injection Molding. All aspects of the injection-molding process: choice of material, preparation for molding, proper design of product, the machines used, mold design and construction, methods of finishing. Index of molding terms. 36 pp., illus. Tennessee Eastman Corp., Kingsport, Tenn.

PLUMBING

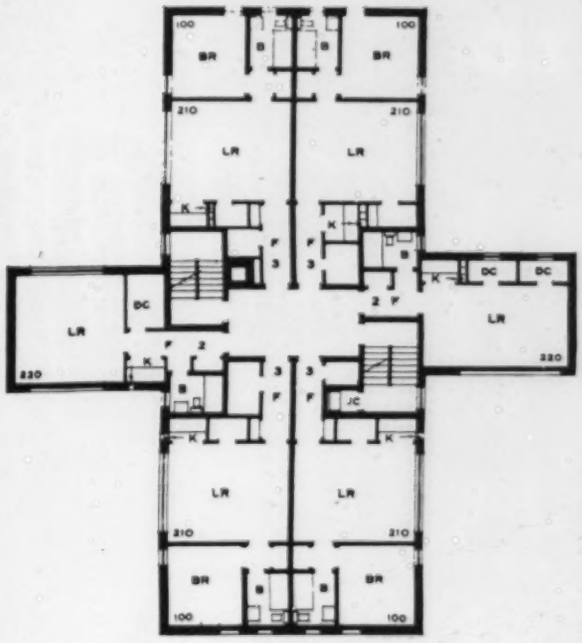
Transitional Data on the Crane Plumbing Line. Catalog of plumbing fixtures for the home and for industrial, commercial, educational buildings, hotels, etc. Intended primarily to furnish dimensional data; improvements in design and trim not included. 32 pp., illus. Crane Co., 836 S. Michigan Ave., Chicago 5, Ill.

STORE FRONTS

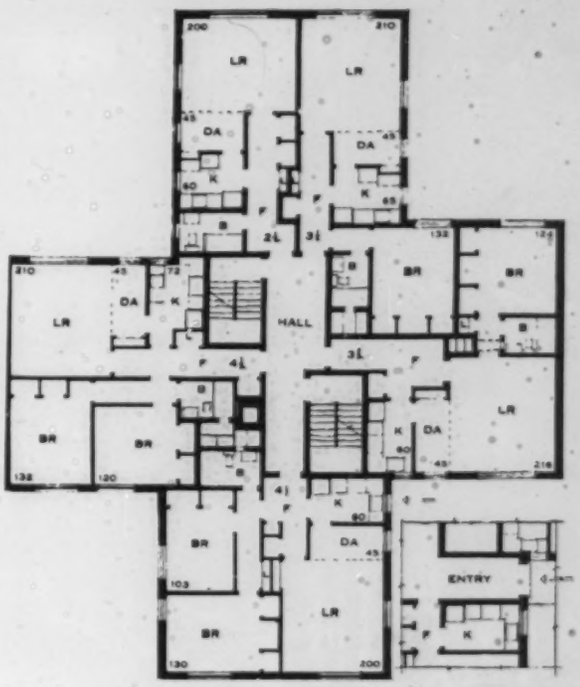
Kawneer Sales-Building Store-Fronts. Portfolio of half-size details

(*Continued on page 130*)

FHA APARTMENT PLAN TYPES (*Continued from page 112*)

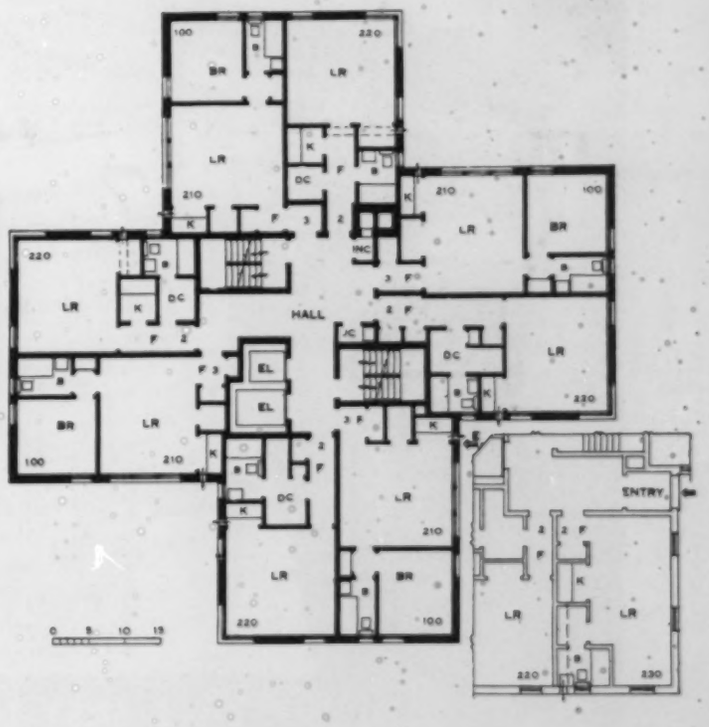


75-ft. lot. Walk-up building, with efficiency apartments. 6 apartments and 16 rooms per floor. Efficiency apartments show alternate treatment of same floor area



75-ft. lot. Walk-up building. 5 apartments and 18½ rooms per floor (18 on first floor)

75-ft. lot. Walk-up building. 4 apartments and 18 rooms per floor. Doors replace windows in dining alcoves on first floor for secondary exits in place of kitchen doors



100-ft. lot. Elevator building, with efficiency apartments. 8 apartments and 20 rooms on each floor (19 on first)

(*Continued on page 119*)

DAY-LINE
....IMMUNE TO
VIBRATION

The shock-resistant industrial lighting fixture. It's rugged—rigid—die-formed of heavy-gauge steel. Its truss-like construction provides for added strength. Nothing can bend or work loose.

May we send Bulletin 30-A with complete details?

The DAY-LINE

Heavy-duty industrial fluorescent fixture with porcelain-enameled steel reflectors. Designed for two and three 40- or two 100-watt lamps—unit or continuous installations. U. S. Patent Nos. 2317434, D-135375 and D-133458.

Day-Brite Lighting, Inc., 5465 Bulwer Avenue, St. Louis 7, Mo.
Nationally distributed through leading electrical supply houses.
In Canada: address all inquiries to Amalgamated Electric Corp., Ltd., Toronto 6, Ont.

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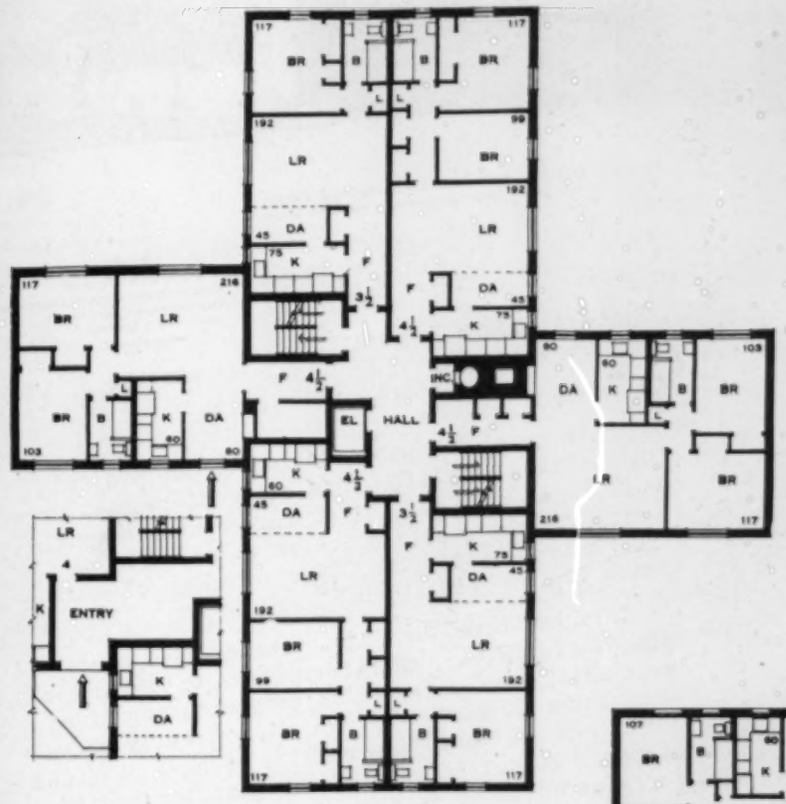
IT'S EASY TO SEE WHEN IT'S

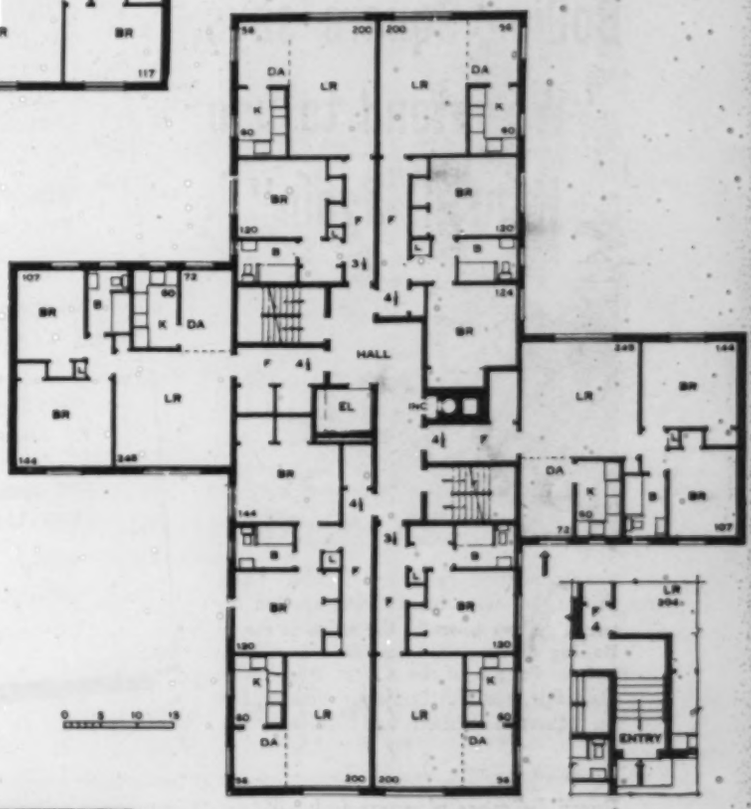
DAY-BRITE
Lighting

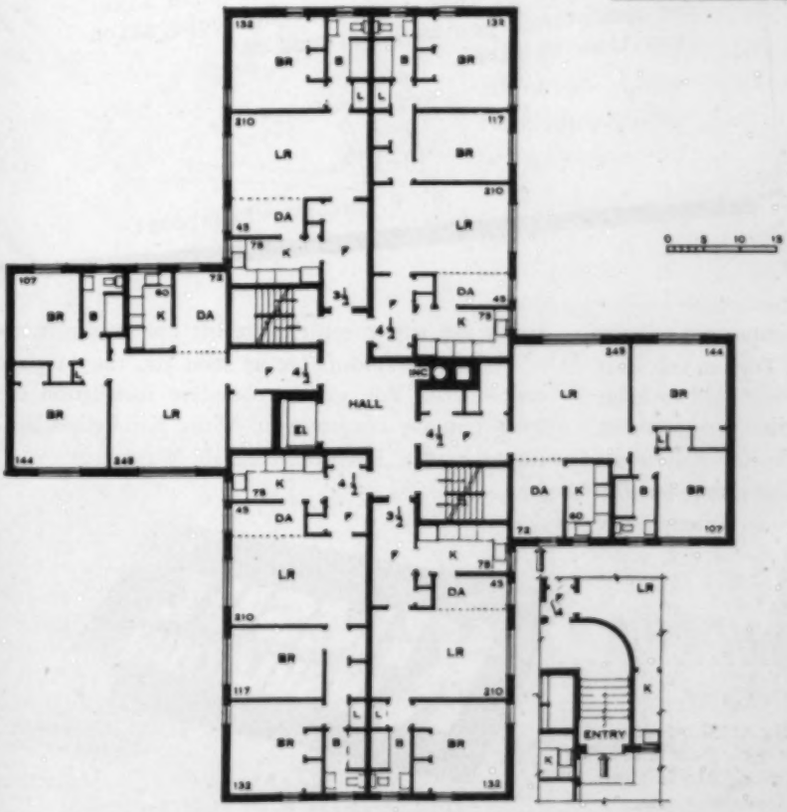
FHA APARTMENT PLAN TYPES (*Continued from page 117*)



(Left) 100-ft. lot. Elevator building. 6 apartments and 25 rooms per floor (24½ on first floor). Plan is approximately the same as last plan on page but with room sizes reduced to meet possible need in lower rent projects

(Below) 100-ft. lot. Elevator building. 6 apartments and 25 rooms per floor (24½ on first floor). Plan is approximately the same as last plan on page except for room arrangement which gives preferential treatment to living rooms at front and rear





(Left) 100-ft. lot. Elevator building. 6 apartments and 25 rooms per floor (24½ on first floor). Room arrangement gives preferential treatment to bedrooms in front and rear apartments

A portion of the 300-dpartment Bolling Square project for Naval officers at Norfolk, Va.

Why the builder of Bolling Square says, "We intend to use Kimsul* again"

Simple method by which Double Thick KIMSUL, 16" wide blanket, was applied between ceiling joists in the attics of the 23 Bolling Square buildings. This illustration is from Page 6 of the KIMSUL Application Data File, a useful insulation manual, free on request to architects and builders.

BOLLING SQUARE, INC. - BOLLING AVENUE CORP.

Builders of "Bolling Square" For Naval Officer Personnel

BOLLING AVENUE AND COLLEY AVENUE
NORFOLK 5, VIRGINIA
Phone 25810

Kimberly-Clark Corporation
Neenah, Wisconsin

August 3, 1946

Gentlemen:

We have completed construction of our project in Norfolk, Virginia, consisting of twenty-three buildings, with a total of three hundred apartments. In the construction of these units we used approximately 125,000 square feet of double-thick Kimsul insulation.

This has been the first time we have used Kimsul insulation, therefore, have withheld comment until this date, which completes our first six months of occupancy. We are extremely satisfied with the very fine results we have obtained by using Kimsul and wish to congratulate you for manufacturing so fine a product.

At the present time we are constructing two additional projects in Richmond, Virginia, and we intend to use Kimsul again. We would like to thank you at this time for the cooperation and assistance you have offered us from time to time.

Very truly yours,

B. F. Bonner, President

Every day more planners and builders of important projects express preference for *many-layer* KIMSUL*. Tops in efficiency ("K" factor 0.27, J. C. Peebles) . . . extremely light (average density, including cover, 1.40 lbs. per cubic foot), KIMSUL is also one of the easiest of all insulations to apply. It's a prefabricated blanket, handily packaged and compressed to only 1/5th installed length. And it's clean—no irritating dust or splinters. KIMSUL provides permanent protection too—won't sag, sift or settle . . . resists fire, moisture, and fungi . . . is termite proof. Let us send you the 11-page Application Data File giving complete installation details for KIMSUL in any construction. Write Kimberly-Clark Corporation, KIMSUL Division, Neenah, Wisconsin.

We are producing all the KIMSUL Insulation we possibly can, but due to the great demand, your dealer may have some difficulty in supplying your requirements as promptly as usual.

KIMSUL INSULATION
REG. U.S. & CAN. PAT. OFF.

A PRODUCT OF Kimberly Clark RESEARCH

*KIMSUL (trademark) means Kimberly-Clark Insulation

THERE'S a store in every community which shoppers patronize *first*. Naturally, it's the smartest shop on the avenue. Attractive outside as well as within, the distinguished Brasco Front sets it apart from competition, identifies it as the leader in its field.

Modern store front design entices the shopper with an intimate view of the interior. Low bulkheads and high ceilings, with generous expanses of plate glass, create the impression of being inside the store before its portals are actually passed.

Today's unique fronts are built most effectively with complete Brasco Construction. Our comprehensive line of unified members fully interprets the architect's ideas with sound, economical construction, easily installed. The result is a beautiful, sales-winning store front . . . distinctive as a trade-mark.

BRASCO MANUFACTURING CO.

HARVEY • (Chicago Suburb) • ILLINOIS

National Distribution Assures Effective Installation

ARCHITECTURAL ENGINEERING

TECHNICAL NEWS AND RESEARCH

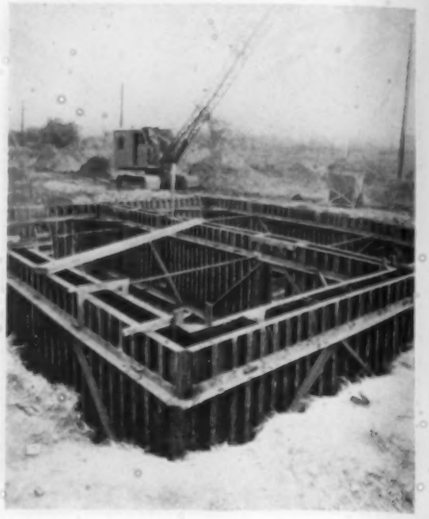
(*Continued from page 113*)

shelves are indirectly lighted by fluorescent lamps to give light for moderate visual tasks. To give extra light for reading, incandescent table lamps are equipped with the new Indirect Bolite bulb and circular fluorescent tube.

In the event that the television screen is to be viewed under darkened conditions, "black light" units concealed under shelves, tables, and chairs, can be turned on to make the fluorescent-treated carpet glow colorfully.

STEEL FORMS

A manufacturer of steel forms for concrete construction now offers *Atlas Speed Forms* for house foundations, walls and floors. It is claimed that in housing developments a complete house foundation can be made in a day's time, including stripping, moving, erection, and pouring. The forms are made of 14-gauge blue steel, 5 to 10 ft. long, averaging 30 lb. in weight, and are said to give over 200 uses without repair, when given normal handling. Other forms for concrete construction include flat slab, pan, column, wall, pipe, tunnel, caisson, bridge, road, sewer, and steel plate work. Irvington Form & Tank Corp., 43 Cedar St., New York, N. Y.



Steel forms speed concrete construction

WATER HEATER

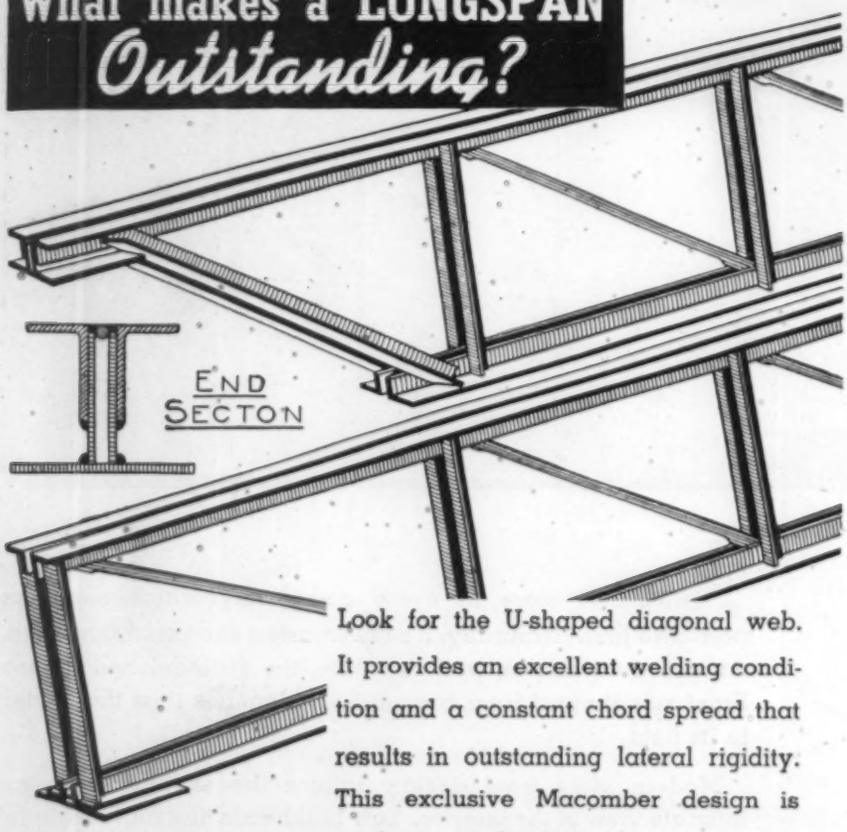
Glass-lined tanks for electric water heaters have been designed for installation in soft-water areas of the country where acid conditions often hamper operation of conventional models. Tanks are available in 30-gal. or 50-gal. models for use with either one or two heating units, depending upon requirements. These heating units are immersed in the water, heating by direct contact. All models are thermostatically controlled, operate automatically, and are insulated with approximately 3 in. of spun glass wool. Frigidaire Div., General Motors Corp., Dayton 1, Ohio.

ALUMINUM SIDING

Recently announced is *Compo-Miracle Rigid Aluminum Siding*, available from lumber and building supply dealers in 4-ft. lengths. This siding is said to lie flat against the sheathing and have greater rigidity, thereby reducing to a minimum denting, warping, and ladder marks. Also, it provides four thicknesses of metal through the beading for strength where most needed. Siding is applied from bottom of the wall upwards, each length interlocking with the length below. Joints are staggered and nailed to assure a tight butt that will not gap. Corners butt against wooden corner strips and are caulked, making it possible to cover a complete wall without laying an entire course around the building. Starter strips at the base of the siding are provided, or base can be caulked. Compo-Miracle Products Co., 15221 West Eleven Mile Rd., Berkley, Mich.

(*Continued on page 124*)

What makes a LONGSPAN *Outstanding?*



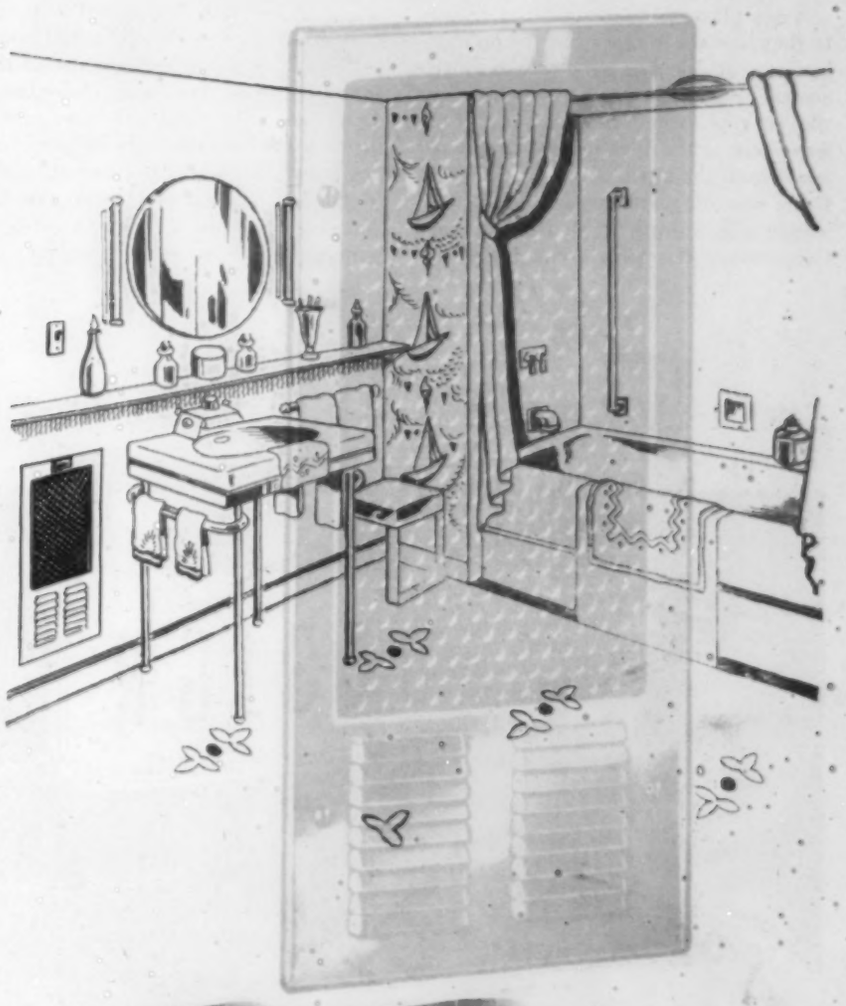
Look for the U-shaped diagonal web. It provides an excellent welding condition and a constant chord spread that results in outstanding lateral rigidity. This exclusive Macomber design is made in underslung or square end types with sloping or parallel chords in lengths up to 70 feet. Here is a completely standardized structural unit, specified from load and span tables for unobstructed floor or roof support. Get our complete design information for your next project.

STEEL JOISTS
ROOF PURLINS
ROOF TRUSSES
LONGSPANS
ROOF DECKING
STEEL SIDING

MACOMBER
CANTON • OHIO
MEMBER OF THE STEEL JOIST INSTITUTE

Efficiently-designed Heating Systems

NOW INCLUDE THE FA ELECTRIC QUIKHETER

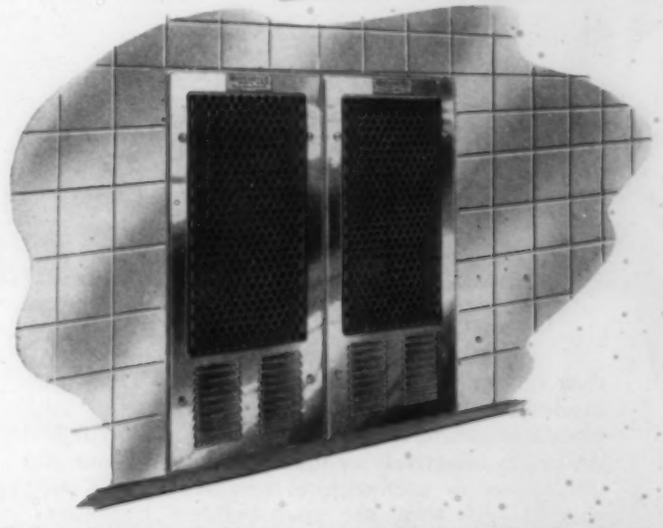


No matter how efficient your regular heating system may be, there are always times when extra heat is not only a comfort and convenience but an almost necessity.

There are those cold, chilly and damp mornings, for instance, when the regular heating plant is not in operation. Then, there are those cold, blustery days, when wind and cold just will seep into the room and chill it. Or there are those times when it seems hours before heat begins to filter into the house from the regular heating plant.

FA Electric Quikheters are ideal for situations such as these. Easy to operate, requiring only the flip of a conveniently-located switch, they send forth billows of warm air that will change the temperature of the average room in three to five minutes.

Install one of these attractive, convenient, fuel-saving, comfort-giving units in your home today and thus provide against unusual weather variations.



Now Available

Built-in FA Electric Quikheters are available in single units of 1,000 and 1,500 watts and twin units of 2,000 and 3,000 watts, for immediate delivery. Contact your nearest electrical contractor for details or send for Bulletin No. 77.

MAKERS OF...
BUSDUCT
PANELBOARDS
SWITCHBOARDS

Frank Adam
ELECTRIC COMPANY
ST. LOUIS, MISSOURI

SERVICE EQUIPMENT
SAFETY SWITCHES
LOAD CENTERS
ELECTRIC QUIKHETER

ARCHITECTURAL ENGINEERING

TECHNICAL NEWS AND RESEARCH

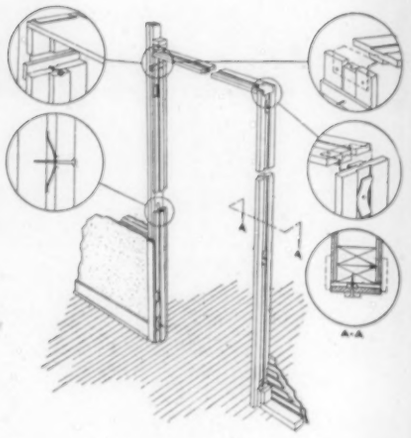
(*Continued from page 122*)

PLASTIC JOINTER

A new plastic jointer, similar in design to the standard jointer of bent iron rod, is now available as a hand tool to finish cement or mortar joints between brick or tile. Its application on cement is said to leave none of the discoloration that may result from the touch of iron on cement. Other advantages claimed are its light weight and warmth to the touch. Plaz Corporation, Hartford, Conn..

DOOR JAMB

Installation time is reported to be cut from an average of one and a half hours to 8 to 10 minutes through use of the *Wheeler Osgood Tru-Sized Door Jamb*. There are only three precision milled pieces to handle, which are adjusted one at a time. This is said to eliminate making dados, placing and fitting blocks, squaring and plumbing with wedges, gaining for hinges, and cutting and installing stops. Tru-Sized Jambs come complete with all necessary hardware and full instructions for installing. Each set consists of hinge jamb (with starter block glued in place), lock-strike and head jambs (stops on all three jambs), 5 rustproof shock-absorber leaf springs, recessed head screws, washers, and friction clips. Permanent accuracy of fit is claimed since any deviation from original clearances can be quickly compensated for by a few turns of the screwdriver. In case of alterations, the jambs can be moved or salvaged. Wheeler Osgood Sales Corp., Dept. AR, 1216 St. Paul Ave., Tacoma, Wash.



Door jamb, precision milled for true size

WINDOW PRODUCTION

General Bronze Corporation has announced that with the completion in January of its $2,000,000 factory in Hempstead, L. I., current output of half a million low-cost aluminum windows per year will be doubled, and two new types, casement and picture-window, will be added to the line. It is claimed that the *Alwintite Aluminum Window* will have a long-range cost to the purchaser nearly 20 per cent under that of good quality wood ones and nearly 15 per cent less than that of steel, taking into consideration all installation and maintenance costs over a 10 year period. General Bronze Corp., 34–19 Tenth St., Long Island City 1, N. Y.

PLASTIC WALL COVERING

Detron, a plastic-on-fabric wall covering, is now available in 13 new colors based on a survey of architects' preferences. The surface is washable, and has a textured metallic finish. It is suggested for interiors that require dramatic treatment, such as theaters, restaurants, and public rooms. Supplied in double roll units, it is applied like any good wallpaper, on plaster, plywood, fiber and composition board, or metal. A companion product is *Fabron*, used in hospitals, schools, and institutions. Frederic Blank & Co., Inc., 230 Park Ave., New York 17, N. Y.

(*Continued on page 126*)

IMPLEMENT OF ARCHITECTURE

Schlage lock trim offers a flexibility that ranges from stately, conservative locks to modern, contemporary designs. Knobs can be placed *anywhere* on the door. There is a Schlage design to effectively complement any scheme of decoration or architecture. For information on specific lock trim, see your builders' hardware man, or write direct to Schlage Lock Company, P. O. Box 3324, San Francisco.

SCHLAGE LOCK COMPANY

SAN FRANCISCO • NEW YORK

ORIGINATORS OF THE CYLINDRICAL LOCK

"I'm glad we're having Todd Burners in this development"

...a wise specification—TODD Burners for minimum fuel consumption

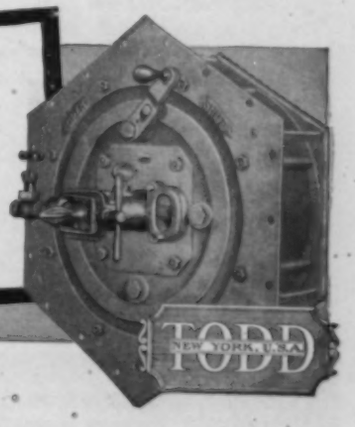
THE problem of estimating future operating costs is restraining many business men from making decisions on building projects. A major item in operation is the cost of producing power and heat.

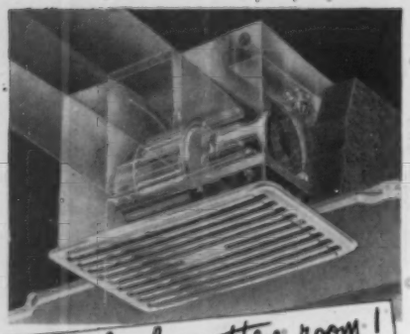
For more than thirty years, Todd has led the field in the development of combustion equipment with maximum power capacity coupled with minimum fuel consumption. There is an economy-proved line of Todd Oil or Gas Burners, fully automatic, semi-automatic, or manually controlled, to fit all requirements, regardless of the type of building or the power set-up. In addition, special equipment can be tailored to meet your exact specifications.

Before selecting burners for your new or remodeled buildings consult Todd Engineers. They will cooperate with you in every way in meeting the individual needs of your clients' power plants.

COMBUSTION EQUIPMENT DIVISION
TODD SHIPYARDS CORPORATION
601 West 26th Street, New York 1, N. Y.

NEW YORK, BROOKLYN, ROCHESTER, HOBOKEN, NEWARK, PHILADELPHIA, CHARLESTON, S. C., CHICAGO, BOSTON, SPRINGFIELD, MASS., BALTIMORE, WASHINGTON, DETROIT, GRAND RAPIDS, TAMPA, GALVESTON, MOBILE, NEW ORLEANS, LOS ANGELES, SAN FRANCISCO, SEATTLE, MONTREAL, TORONTO, BARRANQUILLA, BUENOS AIRES, LONDON





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Available in increasing quantities through leading dealers from coast to coast.

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TRADE-WIND MOTORFANS, INC.
5725 S. Main Street • Los Angeles 37, California

(*Continued from page 124*)

PLASTIC PANEL

A reinforced plastic panel, known as *Neotron*, will soon be on the market. Made of resin-impregnated pigmented wood pulp, Neotron will be available in standard 4 ft. by 8 ft. sheets, 1/16 in. thick, for application to any smooth surface by means of a mastic adhesive. Panels are said to have strength, without brittleness, and, being washable and waterproof, are appropriate for bars, table tops, walls in bathrooms and kitchens, and as a store-front veneer. There will be a variety of finishes: high glaze, semi-gloss, mat, marbleized, textured, wood grain, or solid colors. Macrolyn, Inc., Houston 4, Tex.

TILEBOARD

For a colorful wall surface in bathrooms, kitchens, and stores, *Prestile* comes in panels, 4 ft. by 4 ft., for installation over new or old walls. Made of masonite pressdwood, these panels are plain or scored for decorative effect into 4- or 8-in. squares. Prestile Mfg. Co., 2860 Lincoln Ave., Chicago, Ill.

CIRCUIT BREAKER

Now in production and designed for the protection of 4 single phase circuits or less, the *MO-4 Multibreaker* has both automatic overcurrent and short circuit protection for branch circuits. Its thermal and magnetic characteristics are said to make for greater speed in tripping. It is made to protect circuits of 10 and 20 amperes, plus 30 amperes to conform with new ratings. The Trumbull Electric Mfg. Co., Plainville, Conn.

STANDARDS

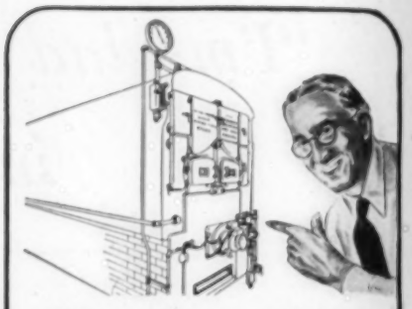
Elevators

Now under revision is the American Standard Safety Code for elevators, dumbwaiters, and escalators, sponsored jointly by the A.I.A., National Bureau of Standards, and American Society of Mechanical Engineers. The usual periodic revisions scheduled for 1943 were postponed due to war work. Suggested rearrangements, modifications, or proposals may be addressed to American Institute of Architects, 1741 New York Ave., N. W., Washington 25, D. C., Att: Theodore I. Coe, Technical Sec'y.

Cement

The 1946 edition of "A.S.T.M. Standards on Cement" presents in convenient form six standard specifications for Portland and other types of cement, and methods of chemical analysis and physical testing. A copy may be obtained for $2.00 from A.S.T.M., 1916 Race St., Philadelphia 3, Pa.

(*Continued on page 128*)



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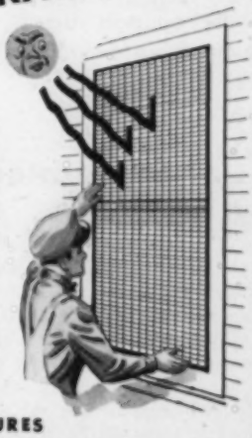
Comparative tests prove KoolShade gives more effective shade than awnings, venetian blinds or window shades. Up to 90% of sun heat rays are blocked and radiated *outside the window*. Vision from inside is not cut-off or blurred . . . every elusive breeze drifts through. Paper-thin slats, in effect, form a miniature outside venetian blind. Sun-exposed rooms stay as much as 15 degrees cooler.



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- *Prevents the fading of valuable drapes and furnishings.*
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An overloaded air-conditioning unit can become effective by installing KoolShade. On new installations an excellent cooling job can be accomplished with lighter, less expensive equipment if KoolShade is used on all sun exposed windows —electricity and maintenance costs are lowered by reducing the load on present equipment.

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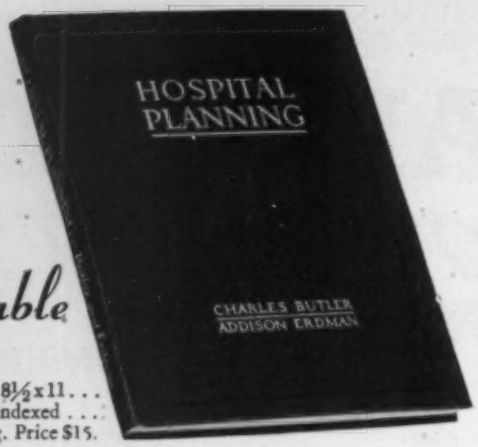

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by CHARLES BUTLER, F.A.I.A. *and* ADDISON ERDMAN, A.I.A.

A Case-Study Analysis of Modern Hospitals

WHEN "Hospital Planning" first went on sale in June 1946, the rush for copies exhausted the initial print order within a matter of weeks.

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But already our backlog of unfilled orders is commanding a large share of this new supply. And the demand is growing!

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ARCHITECTURAL ENGINEERING

TECHNICAL NEWS AND RESEARCH

(*Continued from page 126*)

THEATER SEAT

Contoured to fit the human body, *Bodiform Theatre Chair* is manufactured with arch-springs, concealed hinges, and a frame that is said to be practically indestructible. The seat is formed from a single steel sheet, with no protruding corners or edges, and folds automatically to a "¾ fold" when the occupant rises. Seat and back are designed for quick removal when necessary to replace covering material. Like all other chairs in the line, this model No. 118 is entirely made without tacks or bolts and with no exposed screws. American Seating Co., Grand Rapids, Mich.

VENTILATOR

Suitable for use in houses and most private offices, also in many conference, reception, and rest rooms, *Aeropel Home Ventilator* has a certified capacity of 400 cfm, tested in accordance with the Standard Test Code. Fan, within a grille of white plastic, consists of a 3-bladed aerocurve propeller (1-piece molded Bakelite fabric base), driven by an enclosed 115 60/50 cycle single phase motor. A resilient spring mounting attaches motor to cylindrical air tunnel. Wall box is of rustproofed steel with insulated weather door. Automatic door latching mechanism is furnished with each unit. The fan starts automatically when door is opened and stops when door is closed. American Blower Corp., Detroit, Mich.

AUTOMATIC AWNING

An awning frame, known as *Awn-A-Matic*, is designed to automatically raise and fold most types of fabric awnings, eliminating the need for ropes. The aluminum frame comes in two models for any conventional awning, from small sizes to those over 8 ft. in width. Automatic features, operated from within the house, are said to be synchronized for efficient operation regardless of awning's size. Adjustable arms and automatic mechanisms compensate for its weight as size increases. Also announced is the *Awn-A-Vent*, attached between top of awning and house to permit warm air to escape through louvers. Awning Accessories Div., Orchard Brothers, Inc., 269 Meadow Rd., Rutherford, N. J.

COLORED PENCILS

Thick-lead *Multichrome drawing pencils* come in 50 brilliant colors, reported to be extremely permanent and moistureproof. Pencils are packaged in sets of 12, 24, 36, and 48 assorted colors; and in a box of 36 for a single color. The General Pencil Company, 67 Fleet St., Jersey City 6, N. J.

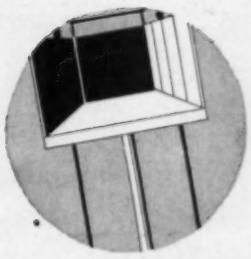
Solution to an Elevator Problem!

THE PROBLEM

To provide economical elevator service for a three-story manufacturing plant of functional design. All movement of raw and finished materials in plant to be handled by fork lift trucks which are to be carried on elevator in process of loading and unloading. Architect's visualization calls for building without elevator penthouse to break streamlined contour.

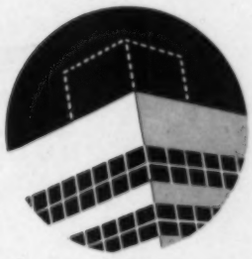
THE SOLUTION

(1) Since no elevator penthouse was desired, a push-up type elevator should be used. (2) Loading by power vehicles called for unusually accurate landing stops and for an elevator of very strong construction. (3) Initial cost of elevator, including construction provisions, must be held to a minimum . . . elevator operation and maintenance expense must be low. ***Result: A Rotary Oildraulic Elevator was selected because it met all these requirements.***



Elimination of Penthouse Streamlines Building Design

The Oildraulic Elevator requires no costly, unsightly penthouse because it's **pushed up** from below by a powerful hydraulic jack . . . not pulled from above. This also makes possible a lighter shaftway structure . . . no need for heavy load-bearing supporting columns to carry the elevator and its load. No special machine room necessary either . . . the compact power unit can be located in any convenient space on any floor.



Oildraulic Controller Insures Accurate Landing Stops

Where loading and unloading is done by power vehicles, the Rotary Oildraulic Elevator is first choice. Guided by a highly efficient mechanism called the Oildraulic Controller, it operates smoothly and rapidly, stops at floor landings with accuracy, and holds the landings. Also important for this type of service is the rugged construction of the elevator car, with its heavily reinforced sling and platform.

For data to help solve your elevator problems

Streamline your building designs and make sizeable savings in construction costs by specifying Rotary Oildraulic Elevators for 2, 3 or 4-story structures. Coupon at the right will bring you complete information and Architect's Preliminary Layout Data.

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ARCHITECTURAL ENGINEERING

TECHNICAL NEWS AND RESEARCH

(*Continued from page 114*)

covering the complete Kawneer K-47 line of glazing moldings, metal trim and awnings. Description of the various units, features of the line such as flexibility and ease of installation. 20 pp. illus. The Kawneer Co., Niles, Mich.*

STUD WELDING

Now, Savings up to 40% When You Use Nelson Stud Welding, and **How to Speed Construction, Cut Building Costs with Nelson Automatic Stud Welding.** New pamphlets on a system of automatic stud welding. Description of process, advantages claimed, typical construction applications. 4 and 2 pp., illus. Nelson Sales Corp., Lorain, Ohio.*

WATER HEATER

The Modern Automatic Electric Water Heater. Pamphlet describing the advantages claimed for the electric water heater, explaining its operation and its installation. 8 pp., illus. Electric Water Heater Section, Natl. Electrical Mfgrs. Assn., 155 E. 44th St., New York 17, N.Y.

LITERATURE REQUESTED

The following individuals and firms request manufacturers' literature:

David Searcy Barrow, Architect, 605 Central Ave., Wilmette, Ill.

George F. Bidwell, Architect, 4139 Shafter Ave., Oakland 9, Calif.

Paul B. Coxe, Architect-Engineer, 45 Wilkins Rd., Pittsburgh 21, Penn.

Ashley De Wolf, Hershey Chocolate Corp., Hershey, Penn.

Fleming & Guerard, Architects, Palmetto Bldg., Columbia, S. C.

W. Edwin Glossop, Architect, Room 1597, Starks Bldg., Louisville 2, Ky.

Bernard J. Hein, Architect, 316 Hyde Bldg., Albert Lea, Minn.

Benjamin Earle Irby, Architect, P.O. Box 3366, Beaumont, Texas.

Robert T. Irwin, 902 College Court #512, Urbana, Ill.

Edw. D. Slater, Architect, Suite 203 O'Gwynn Bldg., 18½ S. Conception St., Mobile, Ala.

Kenneth J. Spry, Architect, 2204 McKinley St., RD #2, Box 74, Hollywood, Fla.

Eaton W. Tarbell & Associates, Architects, 84 Harlow St., Bangor, Maine.

John M. Walton and Associates, Architects, P.O. Box 208, Arlington, Va.

Paul Weinberg, Secretary, Commerce Research Group, 909 Steuben Bldg., Chicago 1, Ill.

A. Ziegenhagen, Designer, P.O. Box 62, Poy Sippi, Wis.

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Your case may be parallel to that of Penton in 1939. Why not check on the possibility of a Webster Heating Modernization program for your own building?

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Webster
HEATING SYSTEMS

THE RECORD REPORTS

(*Continued from page 20*)

under the firm name of Matthiessen and Johnson, Architects. Address: Rippowam Village Rd., Stamford, Conn. A branch office will be maintained at 17 E. 42nd St., New York 17, N. Y.

William E. Richardson, lighting consultant, has opened offices as an industrial lighting engineer at 419 W. 55th St., New York City.

Samuel A. Scoville, Architect, formerly associate of the architectural firm of Furno and Harrison, has become associated with Previews Incorporated, The National Real Estate Clearing House, 49 E. 53rd St., New York 22, N. Y. He will assist with the technical aspects of the business including the company's town planning and engineering department.

Lester C. Tichy, Architect and Industrial Designer, 369 Lexington Ave., New York 17, N. Y., has announced that C. Ralph Fletcher and Raoul L. DuBrul are now associates in his organization.

The firm of Wogan, Bernard & de la Vergne, Architects (Victor Wogan, Joseph Bernard, Jules K. de la Vergne and Albert Muller), has succeeded the firm of Wogan & Bernard. Address: 1703 Pere Marquette Bldg., New Orleans 12.

ELECTIONS, APPOINTMENTS

Twelve new members have been elected to the National Institute of Arts and Letters, including two architects elected to the Department of Art. The two architects so honored are John Walter Cross of New York and Frank Lloyd Wright of Phoenix, Ariz., and Spring Green, Wis.

Kalman Klein, Nassau and Queens builder, has been elected president of the Long Island Home Builders Institute.

Edgar M. Hastings, of Richmond, Va., chief engineer of the Richmond, Fredericksburg and Potomac Railroad Company, has been elected president of the American Society of Civil Engineers. Vice presidents elected by the Society are Gail A. Hathaway, special assistant to the Chief of Engineers, U.S.A., and Professor Ralph B. Wiley, head of the civil engineering school at Purdue.

A. Gordon Lorimer, chief of the Bureau of Architecture, Department of Public Works, New York City, has been named technical consultant to the Producers' Council. He will coordinate the Council's research and technical activities and also will serve as chairman of the organization's Committee on Building Codes.

Frederick R. Lack, vice president of Western Electric Co., has been elected president of the American Standards Association.

The
RESTORATION *of* COLONIAL WILLIAMSBURG

A Reprint of the December, 1935 Issue of
ARCHITECTURAL RECORD

104 pages, bound in cloth
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◆

The Colonial Williamsburg Number of ARCHITECTURAL RECORD — issue of December 1935 — was sold out soon after publication but the entire editorial contents have been reprinted and bound in permanent book form with blue cloth covers.

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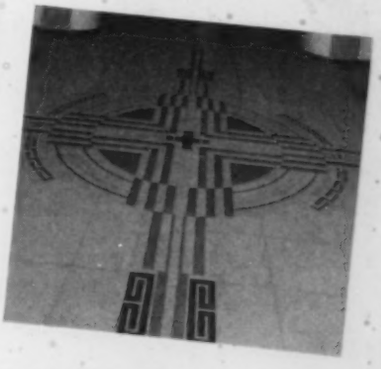
A GUIDE *to* FINER STUCCO

The first requirement for a finer stucco is a cement that can be used white or tinted, can be given a wide variety of surface treatments to harmonize with other building materials or the natural surroundings, and meets all design problems. In addition, it must have all the strength and other qualities of ordinary gray cement.

The original white cement—Medusa White—fulfils all these requirements. Its pure, non-staining white color lends versatility to the architects' expression. Almost unlimited color and texture variations can be obtained with its use. Medusa White Portland Cement meets the A. S. T. M. requirements for a white cement.

Medusa Stucco, when made with Medusa Waterproofed White Portland Cement, offers high resistance to moisture penetration and has unusual non-staining properties. Water-borne dirt is washed off instead of being absorbed. This means stucco has longer lasting beauty—is free of stains and discolorations.

For specifications and information on Medusa White Stucco, write for "A Guide To Finer Stucco".



SPECIFY MEDUSA WHITE FOR TERRAZZO

The above picture illustrates another use for Medusa White—Terrazzo. By using marble chips in many color combinations and tinting the matrix with any shade, unlimited color effects may be obtained. Specify Medusa White, the original white portland cement, for all terrazzo.

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